The background of the slide features a dark navy blue gradient. Overlaid on this are several groups of small, semi-transparent red circles. These circles are arranged in three distinct curved arcs: one in the upper left, one in the middle right, and one in the lower right. They create a sense of motion and depth.

Futureproof Web UI
Design Techniques:

Interaction Design & Animations



The Curated Collection of Web Design Techniques:

Interaction Design & Complex Animations

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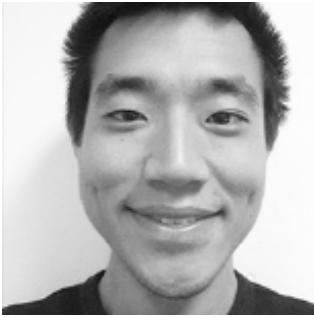
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The Age of Modern Interaction Design

As a practice of designing for the intangible, interaction design has always been one of the most difficult UX disciplines. Gone are the days when users were impressed by simple interactions like a bit of unexpected animation – now animations are almost required, along with plenty of [microinteractions](#) that can't be taken for granted.

New interaction design patterns continue to arise to support new technologies, but the fundamentals remain timeless. In this piece, we'll quickly explore how interaction design has evolved in recent years, and where it may be headed in the near future.

The Nature of Interaction Remains the Same

Interaction design is more than an anecdotal collection of best practices. In fact, Researchers at [Penn State University](#) recently found that users are more likely to be persuaded by messages on websites with interactive features.

“Modality interactivity persuades people because they are having more fun browsing the website, which absorbs them, and creates more positive attitudes toward the message as well,” says Jeeyun Oh, assistant professor of communications at Robert Morris University. “Interactivity persuades people by making users think more deeply about the message.”



Photo credit: <http://styki.org.pl/#1>



Photo credit: <http://dubaiairportsreview.com/>

The nature of interaction design is engagement. This remains the same no matter what decade you're designing in – the difference is the methods available to engage your users. Interaction design patterns evolve right alongside new functionalities supported by the expansion of HTML5, CSS, Javascript, and jQuery. Interactive websites used to be defined by plenty of internal links or a photo gallery – while those are still popular features, you'll need to be much more clever and creative in the execution.

Regardless of technology, the [five pillars of interaction design](#) still stand strong. Driven by human connection and emotion, these can be aided by technology, but not changed by it:

- **Goal-driven design** – Focus on personas, user scenarios and [experience maps](#) so that every interaction moves users closer to completing their goal.
- **Usability** – Function must be intuitive and reliable before it can be fun for users. Provide only as many features as users truly need, then hone in on [reducing the friction](#) and cognitive load of each feature.
- **Affordances and signifiers** – [Form must reflect function](#) since vision is our dominant sense.
- **Learnability** – Interfaces that are consistent with existing designs and across all internal assets are more predictable, which means that they are easier to learn. Learnable interfaces, then, naturally feel more usable since less friction is involved.

- **Feedback and response time** – Interfaces must respond promptly to users in a human (and humane) way so that the experience **feels like a real conversation**. You must approach interaction design as if it were human-to-human conversation, not as a machine that simply responds to what users do or say.

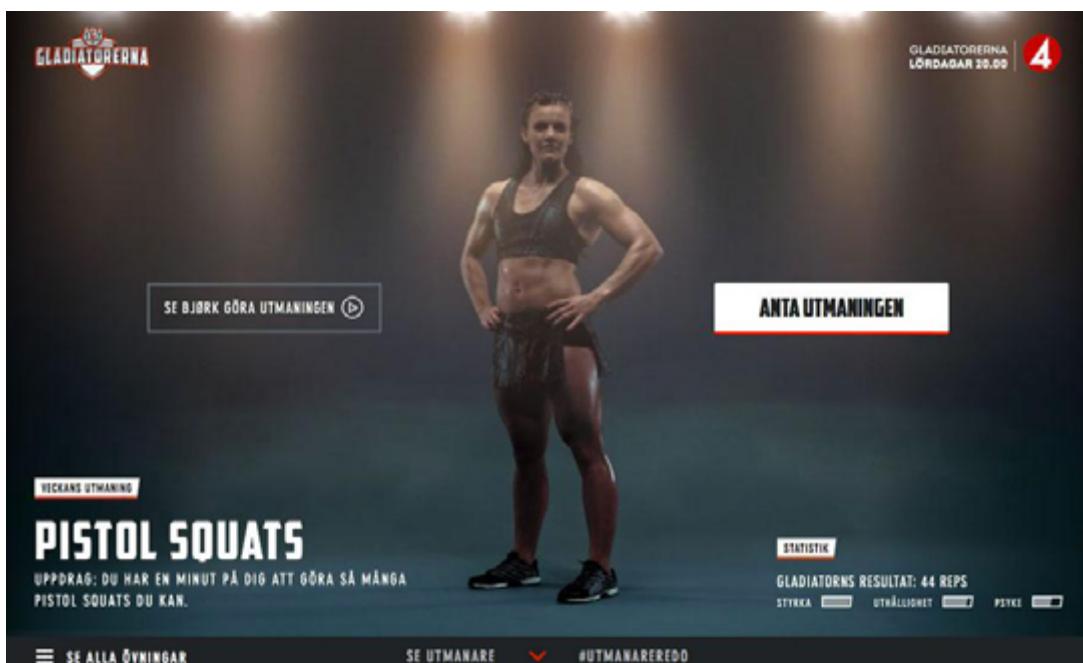


Photo credit: <http://utmanareredo.se/#>

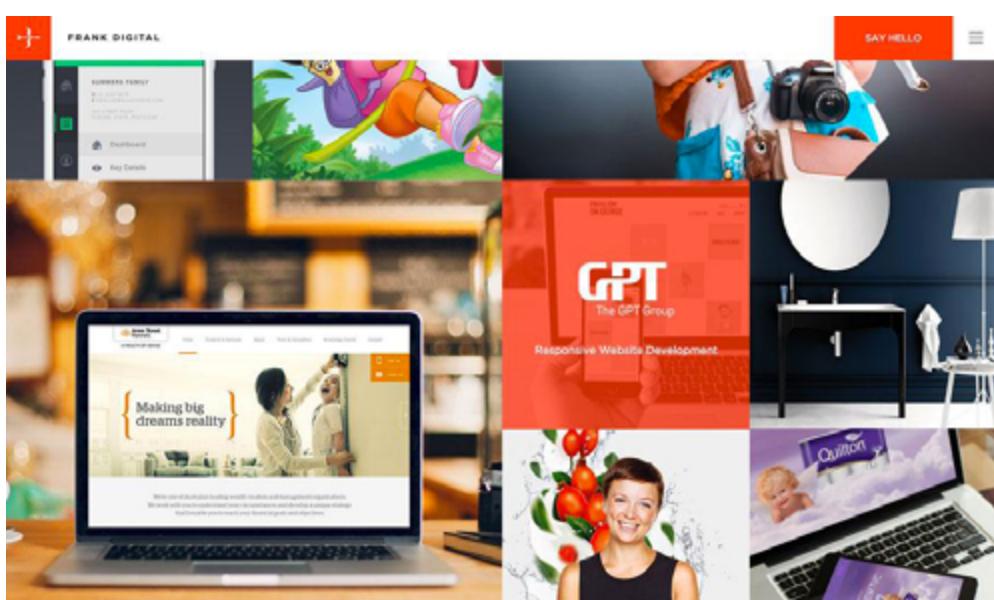


Photo credit: <http://www.frankdigital.com.au/>

Whether in the past, present, or future, these five principles will always determine how interaction design evolves and what it becomes in any new environment.

Modern Interaction Design Techniques

New functionalities deliver new methods of interaction – which is to say, new ways to entertain users as well. Today, users have grown accustomed to the delightful designs made possible through **responsive and adaptive systems**, which creates a self-perpetuating cycle where more designers are incorporating such designs to satisfy their users, who grow more accustomed...

For example, the following handful of design techniques aren't just standalone trends – they are all part of a much larger push for interactivity in this age of responsive and adaptive design:

- **Parallax scrolling** and effects
- **Card-style** layouts
- Video & animation as described in *Interaction Design Best Practices*
- Design elements that require physical actions such as swipes or clicks
- **Micro interactions**, which are distinct moments that happen while using a website or app (think of an alarm bell or deleting an email)

- Push notifications and reminders from websites or apps
- Personalization and location tools so that every app or website feels like it was designed specifically for that user, creating memorable **contextual experiences** (for example, **Waze** automatically asks if you're driving home at 6PM based on your usage patterns).
- Quickly show or hide content with clicks or swipes
- Hover effects and actions for secondary content
- **Transitions** and loop functions between elements



Photo credit: <http://mixpl.us/withoutyou>

Let's examine **MixPlus**, designed by Net+, as a clever example of the art of interaction design.

The website is a series of mixtapes created for users. Click to choose a style, then scroll for a playlist and to start the tracks. The animation is fun and life-like and helps guide the user from the top of the screen to bottom. In the footer, users can continue for an even lon-

ger playlist or to go back to the Net+ site. And with multiple tapes to choose from, users are encouraged to interact and go back to start over with a new option.

The interaction on the page is actually quite limited, but the execution is smooth. First, you rotate through the tapes in a familiar left-right scroll motion. Then, as you scroll down the page to learn about the songs, the interface provides visual feedback of impending action by trailing the tape behind. Through tasteful skeuomorphism, the site communicates function without needing to explain.

Alternatively, the designer could have decided to present each song as a card design that transforms to a play button upon hover, but the effect wouldn't be nearly as delightful and captivating.

A New Perspective on Usability

Mobile considerations force us to rethink the entire web experience – not just how it plays out on specific devices.

It was not long ago that the design community was focused on “[above the scroll](#).” That idea has changed dramatically with small screen design and the reemergence of the scroll as a dominant and important design tool. In fact, the Apple Watch’s [Digital Crown](#) is further reshaping navigation interaction by making it a winding (rather than pinching or vertically swiping) motion.

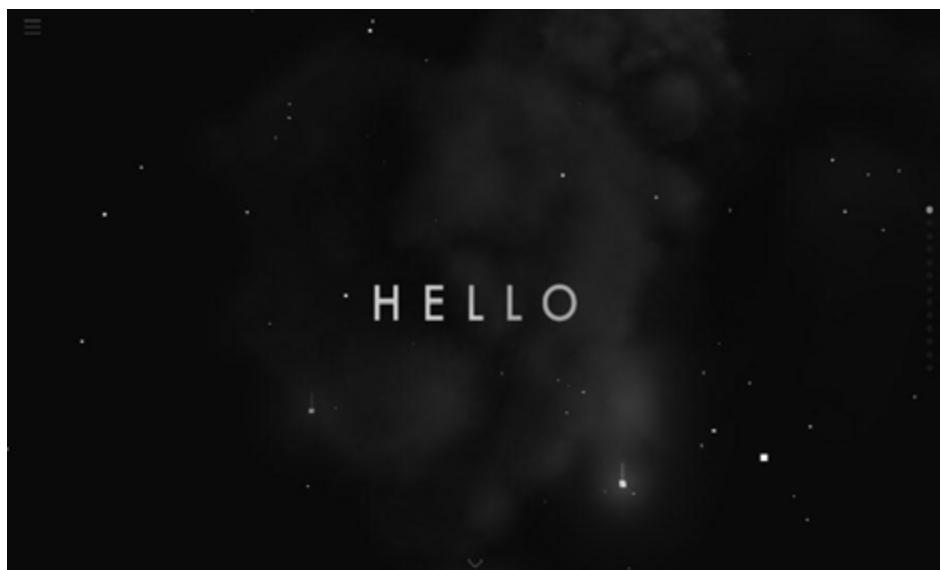


Photo credit: <http://vaalentin.github.io/2015/>

The idea that scrolling kills engagement is one of the biggest UX myths, and it can be a difficult one to overcome. But we can reassure ourselves with some of the data presented by the excellent site [UX Myths](#):

- Chartbeat, a data analytics provider, [analyzed data](#) from 2 billion visits and found that “66% of attention on a normal media page is spent below the fold.”
- Usability expert Jakob Nielsen’s [eye-tracking studies](#) show that while attention is focused above the fold, people do scroll down, especially if the page is designed to encourage scrolling.

Look at the responsive site above: the on-screen “Hello” is the only above-the-scroll message, but the arrow at the bottom of the screen instantly encourages users to move deeper into the site. The scrolling action is accomplished through a physical scroll tool by clicking the mouse to showcase a series of neat animations that guide users through the content.



Photo credit: <http://vaalentin.github.io/2015/>

Even though the site is certainly influenced by the [mobile-first philosophy](#), you find that it's still quite a pleasant experience even on desktop.

When it comes to scrolling as an interaction, we've found that long scrolls aren't really a usability issue provided that each content section (and overall narrative) remains compelling. The abundance of [single-page site designs](#) proves that interaction design can take a chapter from literature (quite literally) to present memorable experiences in a linear format.

One of the great frontiers of interaction design, mobile design is full of fresh patterns that redefine the relationship between users and technology.

Consider the tap on mobile devices versus the click of websites. As little as two years ago, users fumbled to navigate mobile websites because a great number of sites still required an almost click-style action or use of website tools such as scroll bars. Now, common actions include swiping, tapping and zooming to get greater access to information on the small screen (all thanks to interaction design).

Given the rise of responsive and adaptive design, every website must not only work perfectly on a desktop resolution, but also feel like an app-like website on a smaller devices (including wearables). Each of these devices requires a different set of interactions that impact how, and if, users visit a website.

Users access websites through multiple device entry points. A bad experience at any time can turn a user away permanently, making interaction design the key discipline to ensuring a consistent [device-agnostic experience](#).

Think of interface design and interaction design as the right and left hand for designing adaptive and responsive experiences. As we revisit how content must be prioritized (and repositioned) on the screen from a [mobile-first perspective](#), we also must be willing to redefine how users actually engage with that content.

Thinking Beyond the Now

Changes in technology continue to expand the capabilities of interaction design. After all, much of what we have seen and are designing for is mandated by the need to make unfamiliar devices feel instantly familiar.

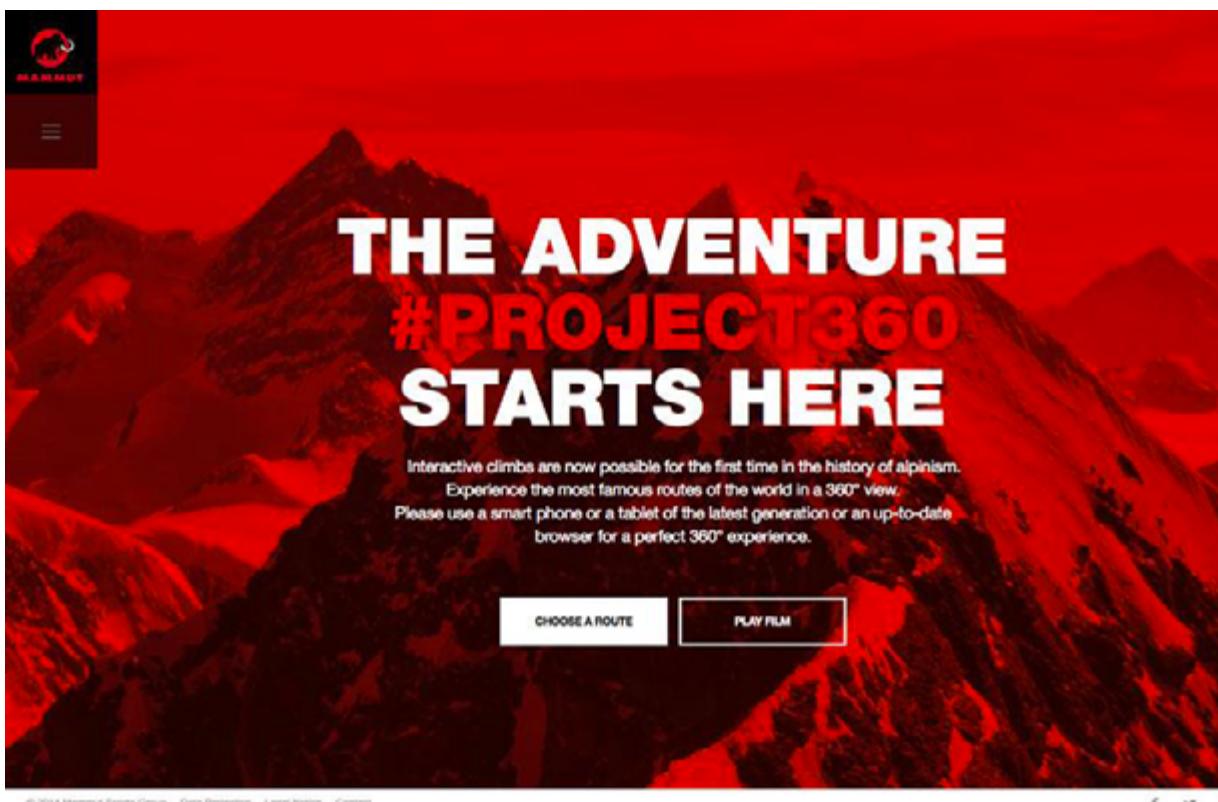


Photo credit: <http://project360.mammut.ch/#home>

You can certainly argue that wearables are the “next big thing” on the horizon for interaction design. Whether that’s a watch or necklace or chip in a shoe, interactions between humans and devices that touch the skin will grow in importance and every little detail will matter, from how the device works to how it feels on the skin for users (remember the [Fitbit recall](#) because the device irritated some users’ skin).



Photo credit: <http://blossomtype.com/#>

Personalization will continue to be a goal in interaction design. Geolocation tools already help create better contextual experiences, but more sites, such as [Blossom Type](#), are gaining popularity since they allow users to input specific information to create a unique, shareable experience. (Blossom Type creates a movie based on the information entered by the user.)

Interaction design is changing almost daily with technology and user access to new tools. While we can't predict the "next big thing," we can prepare for it by keeping a keen eye on what's happening, what devices and tools are selling – think wearables in the recent future – and how users want digital information delivered and how they want it to work.

The subjectivity of human interactions makes it that much more fun to imagine and design.

10 Free IxD Tools & Resources

You're not alone in this brave new world. Below are ten of our favorite resources and tools to help you navigate the changing terrain of interaction design.

1. **Interaction Design Basics** – Usability.gov outlines questions and considerations for interaction design that are a good springboard on the path to UI/UX design.
2. **“How Do You Design Interaction?”** – A refreshing approach that teaches you how to design interactions as conversations.
3. **“Smart Transitions in User Experience Design” by Smashing Magazine** – A look at a variety of simple and effective animations that help guide users through website designs.
4. ***Interaction Design Best Practices: Mastering Words, Visual and Space*** – The basics of interaction design are rooted in basic design theory; this free 115-page guide teaches you how to master the tangible elements of IxD.
5. ***Interaction Design Best Practices: Mastering Time, Responsiveness and Behavior*** – The free 106-page guide helps you master the trickier intangible elements of IxD.
6. **Origins of Famous Micro Interactions** – Everything from the “You’ve got mail!” announcement to the Facebook like is a micro interaction. Learn more about how they came to be.

7. **Interaction Design Experiments** – How do different interactions work? Take a look at a variety of options to help pick the best interaction patterns for your projects.
8. “**Making and Breaking UX Best Practices**” by **UX Booth** – The rules for user experience design are changing constantly; this guide helps you understand the roots of common practices and tools.
9. **iOS Human Interface Guidelines** – Apple’s guide outlines how developers and designers should create for the mobile web.
10. **2015 IxD Awards** – The winning projects and finalists create an inspiring set of best practices and examples of how to create different and interesting projects.

Immersive Interaction Design Techniques

The wheel of progress is changing what we think of as “new” or “old,” and users can easily scorn the sites and apps they loved only a few months ago. But for every door that technology closes, a new one is opened.

Below we’ve collected some of the modern IxD techniques that users are flocking to. Some are genuinely new, while others are just new takes on old ideas. Either way, they’ll help you stay ahead of the curve... and the crushing wheel of progress.

1. Animation & Transitions

When it comes to interaction design, one of the most popular concepts is animation and animated effects. Animation can include anything from a cool hover state effect to a full-screen cartoon that plays in the background.

In fact, as you can see below from the [custom animations editor in UXPin](#), you can create different effects for a simple “Ease-In”

animation just by playing with the acceleration of elements. If you'd like to create a more complex animation, feel free to check out [our landing page](#).

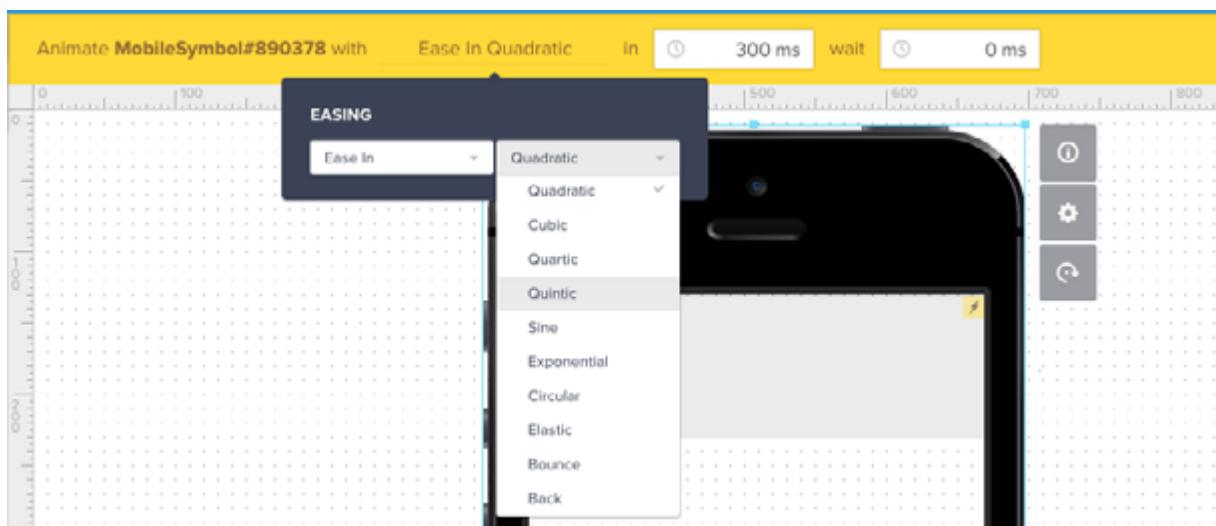


Photo credit: [UXPin](#)

Animations may not be new to interaction design, but their popularity is really only possible thanks to developments in HTML5, Javascript, and CSS. While they were once considered an aesthetic luxury (“Wow, the icon bounces!”) during the age of Flash, they are now becoming a functional necessity (“Ugh, the icon doesn’t do anything except bounce?!”).

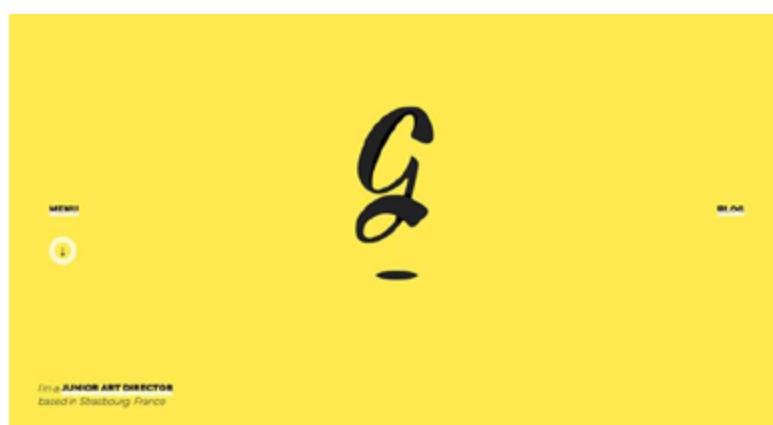


Photo credit: <http://gaetanpautler.com/>

Aside from the visual appeal, animations more importantly transition users between states of content. Transitions are the glue holding together all animated effects. How does the user get from one state to the next? What does each different state ask or tell the user to do? A smooth transition allows the animation to unravel in a way that communicates both points effortlessly.

When used well, animation provides context for the design by helping users know *how* to interact with it. (Remember, when it comes to interaction, some newer technologies and interaction patterns may feel uncomfortable, unfamiliar or evolve over time.) Animations are also a smart tactic for **delightfully distracting** users during longer load times, keeping them engaged in what would otherwise be a frustrating experience.

Animation and animated transitions can be an obvious solution for some design frameworks. As described in *Interaction Design Best Practices*, the five primary functions of animation include:

1. Animated notifications
2. Revealing information
3. Highlighting content
4. Collapsing forms and menus
5. Scrolling, especially for one-page websites

When it comes to transitions, seamless film-like animation is the key to illusion.

Users are accustomed to television-style, high definition and pixel-perfect design. Disney animators Frank Thomas and Ollie Johnston's outline of the [12 principles of animation](#) still hold true today and should be the basis for designing all animation techniques and transitions well into the future.

2. Interactive Narrative (“Webgraphics”)

While social media sharing made the popularity of infographics skyrocket as a visual information medium, “webgraphics” are the interactive design equivalent. Even though the webgraphic format isn’t seen on every corner of the web, we’ve learned plenty of interaction design lessons from the medium.

While both graphic formats follow the same idea, webgraphics use tools such as HTML5, CSS3 and jQuery to deliver an interactive experience through color, type and slick animations.

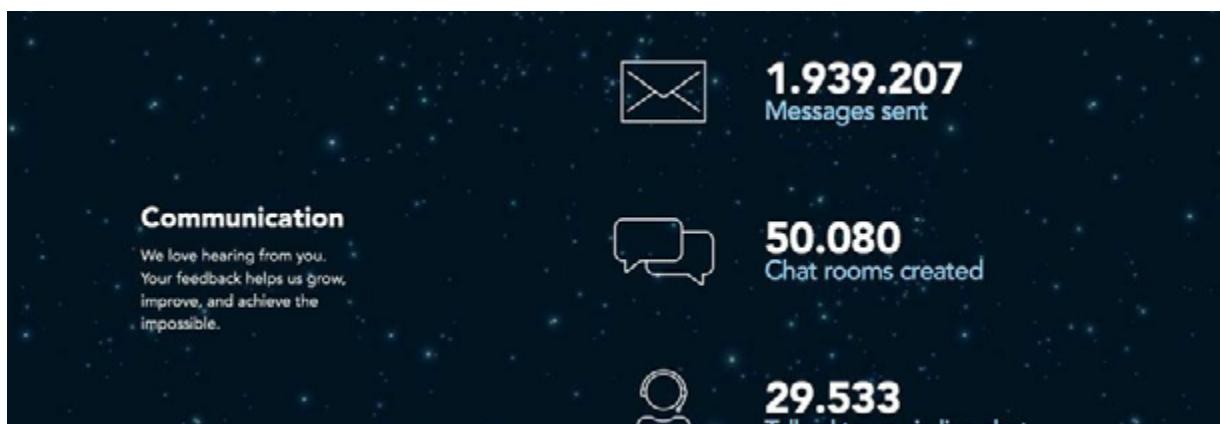


Photo credit: <http://www.psd2html.com/10-years-in-review/>

Webgraphics, a term that Venture Beat coined in 2013, typically asks users to perform an action en route to getting access to the full story. This action can be as simple as a click or more involving requests such as typing in words or touching an image on the screen.

The real power of webgraphics lies in their effortless integration into the user path. Unlike an infographic, you can design the webgraphic to create a “site within a site” experience that has completely immerses the user and serves up relevant links and forms along the way for more persuasive conversion.

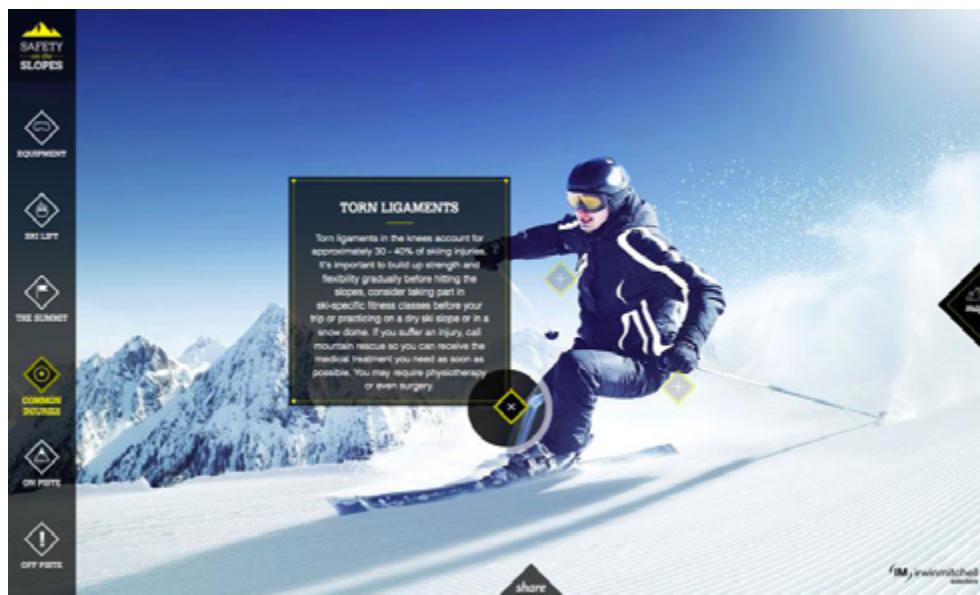


Photo credit: <http://www.irwinmitchell.com/safety-on-the-slopes.html>

For example, **Safety on the Slopes** (above), is just what an interactive webgraphic should be. The website combines information, mapping, video, facts and numbers to help users understand the dangers of winter sports in a way that might otherwise feel like a boring lecture.

Granted, there's no calls to action or subtle hints for additional actions, but that could certainly be implemented. For example, imagine if an outdoor sport retailer created this site as part of a seasonal campaign – you could embed a few relevant products for potential hazards or link out to product categories.

We understand that not everyone has the resources to build a standalone interactive infographic (whether in their site or as a standalone URL), but you certainly apply some of its techniques to make any website feel more immersive.

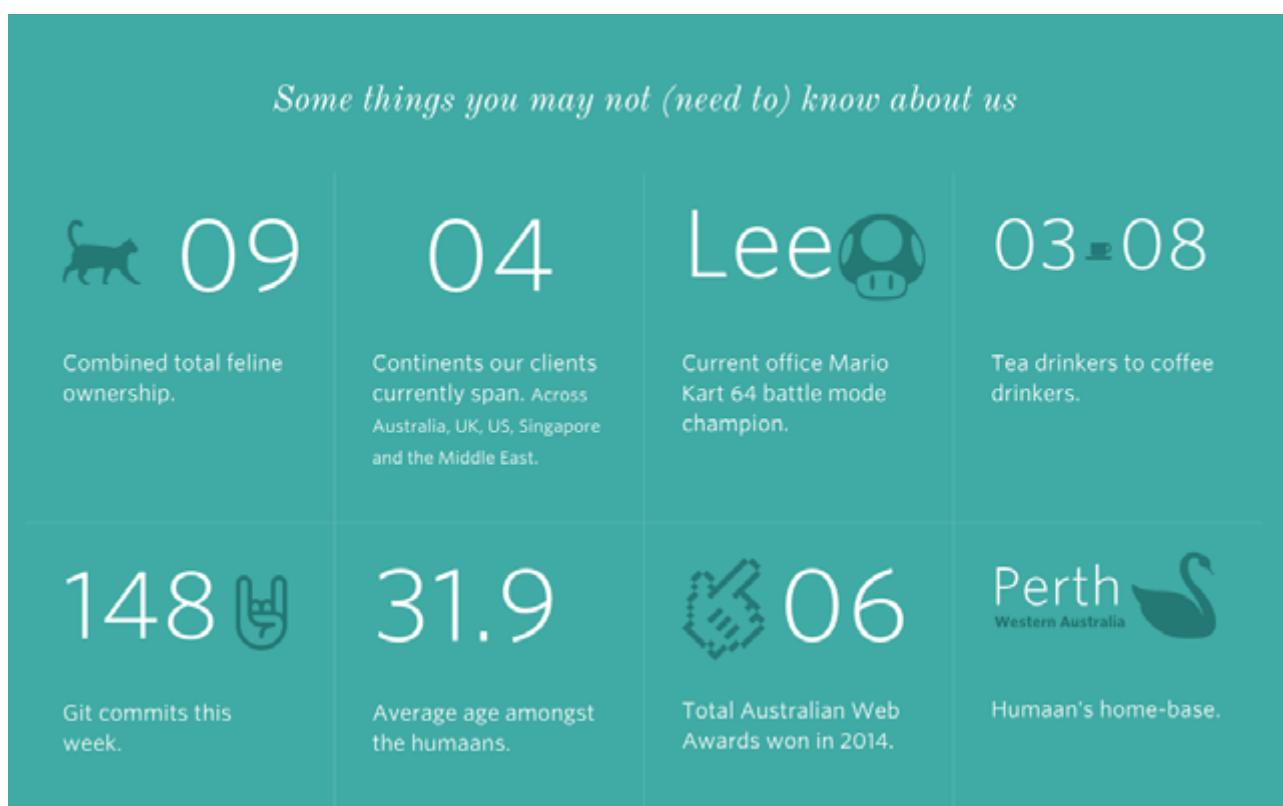


Photo credit: <http://humaan.com/about/>

For example, scroll-triggered animations are common in interactive infographics but are also used on sites like [Humaan](#) (above) to reveal facts about its team in a fun and unimposing manner.

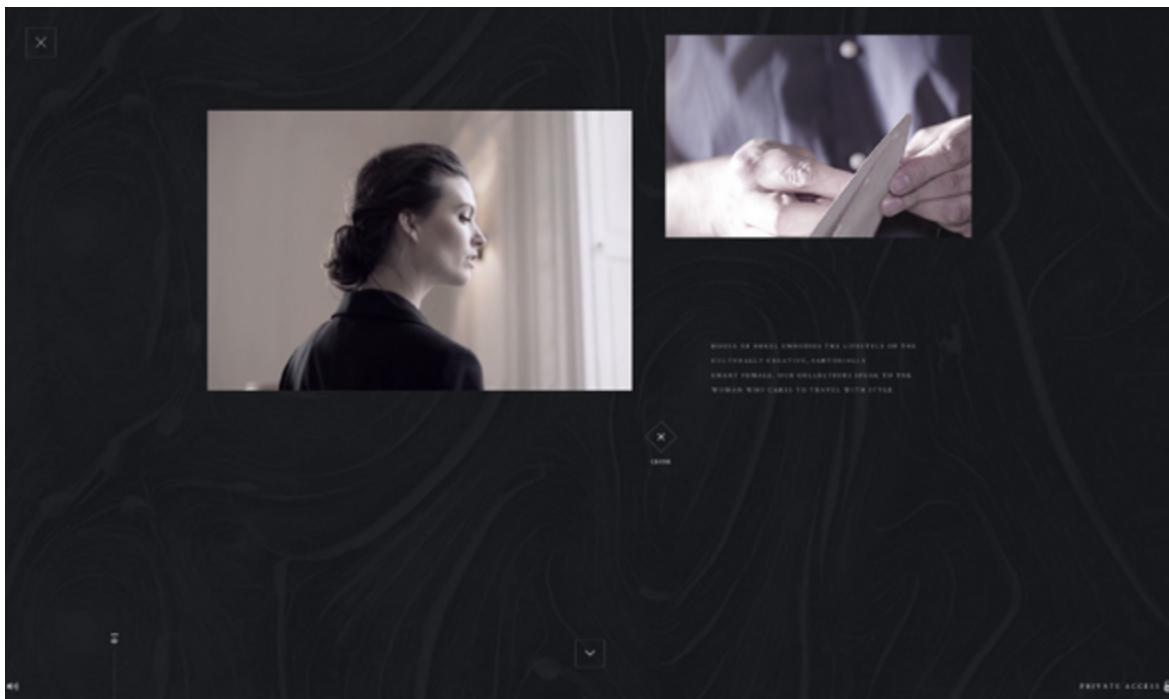


Photo credit: missing source

House of Borel (above), a luxury fashion brand, certainly feels more like an interactive story than a traditional website. You can see elements of interactive infographics at play here: videos triggered by scroll, an experience that “unfolds” and guides you through different chapters, and a much heavier focus on visual narrative over hierarchical navigation. The treatment certainly makes sense for an elegant brand that wants you to feel the lifestyle first before revealing its products.

3. Micro Interactions

A micro interaction is a momentary event that completes a single task, such as the ding of an alarm in an iPhone to notify users. Logging in to your online banking portal and even liking content on a site like Facebook are just some of the micro interactions that define the details of experience design.

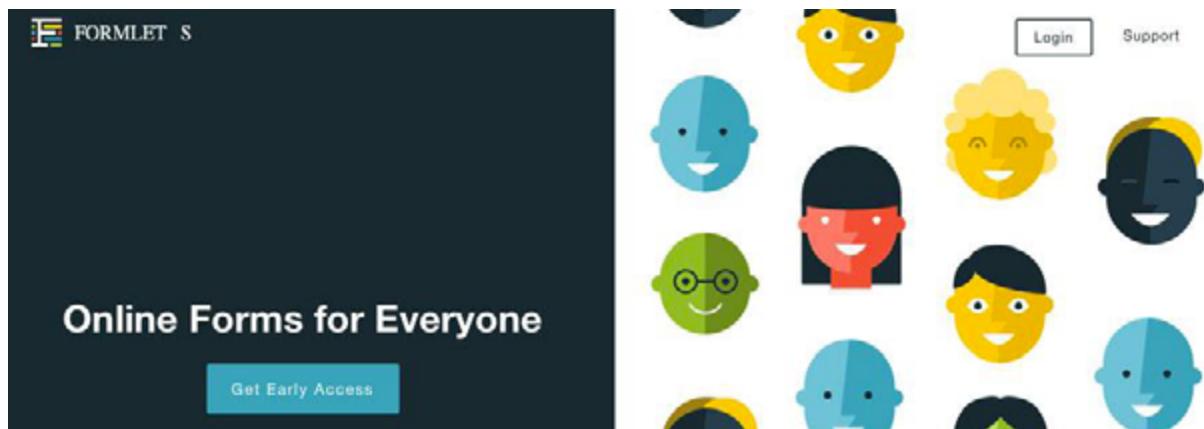


Photo credit: <https://www.formlets.com/>

As a website and app user, you probably take part in hundreds of daily micro interactions, all of which add up to one cohesive user experience. Arguably the smallest interactive elements of a design, micro interactions are some of the most vital (in fact, Fastco Design even calls it [the future of design](#)).

Consider, for instance, how quickly you would abandon a website if you could not set a username and password in only a few clicks or if the push notifications from your favorite news site appeared too frequently.

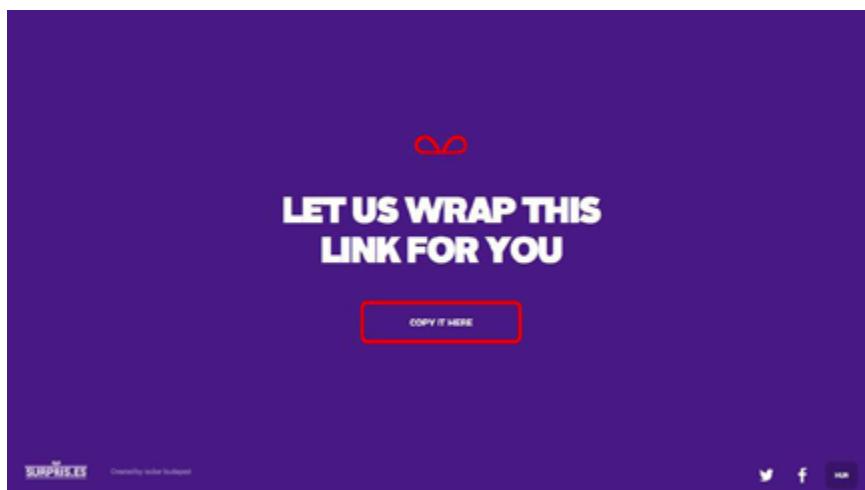


Photo credit: <http://surpris.es/#url>

Whether for a blog or a global ecommerce site, these small interactions serve a variety of core functions to almost every website:

- **Accomplish a task** – This includes simple action such as logging in, adding a status update or setting an alarm.
- **Connecting elements** – Syncing two points creates a micro interaction between two devices or websites, whether that's from multiplayer games/apps that sync from device to device or simple Bluetooth earbuds for your smartphone.
- **Making an adjustment** – Any change to a website setting (such as muting the volume on an app or turning down the volume on a music player) and the corresponding visual (and audio) feedback constitutes a micro action. Some of these are so small users perform many of the actions without any thought, which is why micro interactions must be carefully designed to provide just enough feedback without feeling intrusive.
- **Change in state** – Turning a website, or function therein, off or on changes the state and completes a small action.
- **Unique data interaction** – This refers to getting an in-time bit of data, such as checking the weather or traffic in your area, as result of a direct action such as opening an app or checking a website with location tools.

An action initiates every one of the actions above; the user does something in a website or app to start the process (even if it continues after

the initial step). This follows a pattern of call-to-action from a user, rules for engagement as determined by the interface (what will happen and how), feedback from the user (did it work or not) and patterns or loops (does the action happen once or repeat on a schedule).

Every one of these tiny pieces is part of the design plan when it comes to interaction. To learn more about micro interactions, we highly recommend checking out [the site](#) of Dan Saffer who coined the term.

4. Layering Effects

Creating an engaging interactive experience is not about adding a single effect to your website design. Like we described in [Web UI Design for the Human Eye](#), it is a planned effort that requires layered design techniques and careful thought for user flow and habits.

By combining effects like [parallax](#), long scroll, background video, etc., your design is both visually intriguing and inviting to user interaction. The trick is not to go overboard – and there is a fine line between a careful hierarchy of user interactions and a chaotic mess.

Below, we'll examine three sites that do a great job of layering effects to create an immersive interactive experience.

1. AIGA 100 Years of Design

The [100 Years of Design website](#), designed to celebrate the history of design as an art form, uses a variety of techniques and trends,

from scrolling actions to a hamburger menu to user-submitted visuals. Each new screen includes information (scroll down), animation to support the concepts, and cues for moving to the next element (whether through navigation or using on-screen cues).

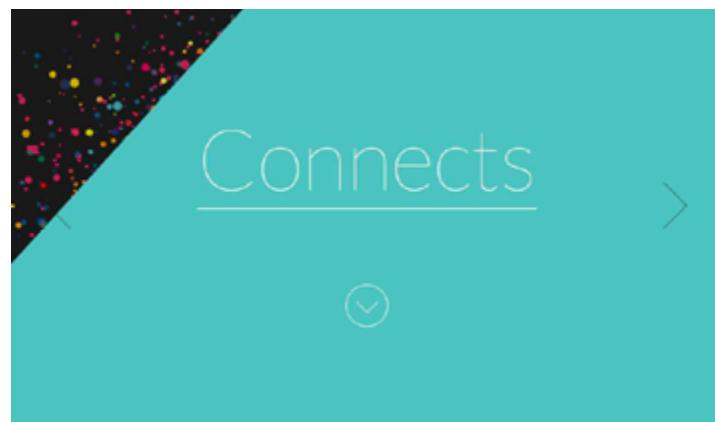


Photo credit: <http://celebratedesign.org/>

2. Eventbrite Seat Designer

Used by event planners everywhere for ticket sales, the [Eventbrite interface](#) offers phenomenal tools for users to create custom seating charts for specific venues or events, something that was once unique to large venues. With a few clicks on the template, users can easily create a custom arrangement.

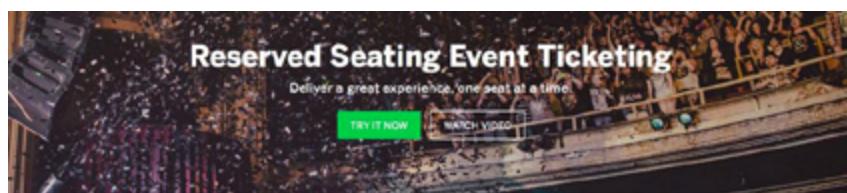


Photo credit: <https://www.eventbrite.com/l/reserved-seating/>

The interface uses an **almost-flat design style** with bright colors, easy menus and smooth-loading transitions.

3. Sonoran's Valley

The site features a game-like experience where users input specific information to take part in a digital journey. The site is layered with phenomenal animation and video effects while using a standard hamburger style navigation. The main screen starts with a minimal-style aesthetic but opens into a wide-screen video experience. (You could play with this site for hours on end.)

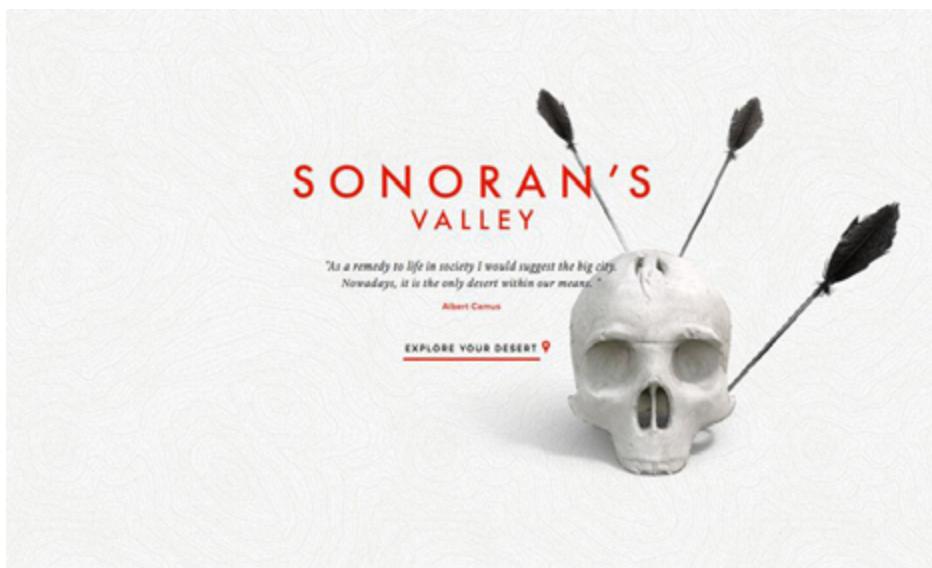


Photo credit: <http://sonorans-valley.com/>

Thinking Beyond the Present

These may be the cutting edge practices of today, but how long before these same groundbreaking techniques makes users roll their eyes?

One of the best ways to stay ahead is to think ahead. Looking at how user needs are evolving, we can confidently – but not assuredly – predict what will be popular in the future.

Many people consider wearables as the next “Wild West” of interaction design. When it comes to wearable interaction, the design will probably shift to more subtle tactile patterns that might be less visual. Vibrations from a watch might be the preferred method of notification, rather than a large image or sound on the screen.



Photo credit: <http://cinderellapastmidnight.tumblr.com/>

Across all mediums, interaction will likely become more television-like as storytelling remains a core aspect of digital design.

While you always want to ensure the design helps users accomplish their goals, it's very likely that the user choices will be presented as part of a larger narrative on the site. It's not a tactic that's appropriate for every site (e.g., ecommerce, banking), but it will definitely play a more prominent role in the content flow for highly visual sites. We've seen this already with the emergence of video backgrounds as a common web design technique. As a visual medium, the line between screen devices – TVs, computers and phones – will blur even more.

Interaction design, while primarily visual when we think about websites, will continue to combine visuals with environmental factors. Vibrations, sounds and forced actions will become more common, especially for user-controlled elements such as websites or apps designed for mobile or wearable devices.

While a lot of future-planning is merely guesswork, the fundamentals of our users will, more-or-less stay the same. Users will, predictably, always enjoy interactivity and engagement – the only thing that changes is the avenues available to offer this to them.

Animations In Web UI Design: The Past, Present, and Future

The history of animation goes back even farther than Mickey Mouse and steamboats, but they've entered a completely new era of interactivity thanks to HTML5, jQuery, and Javascript.

In the beginning, animations were treated more as an aesthetic luxury (remember all those Flash splash pages?), and it's now evolved into a powerful tool for smoothing over user interactions. And yet, when we look at the entire scope of past, present, and future, we see that the fundamentals remain unchanged – just with better implementation thanks to better technology.

In this chapter, we'll explore the practical forms and functions of web animation, where they came from, and where they're headed.

The Past: Roots in Traditional Animation

To understand animation, we must first return to the fundamentals that existed well before the web.

The guidebook and animation bible comes from a name that screams animation – Disney. Frank Thomas and Ollie Johnston, two Disney animators, published the *Illusion of Life: Disney Animation* in 1981, outlining the guidelines for animation as we know it. That framework is still the standard today.

The book outlines 12 principles that dictate how to take full advantage of the magic animation can offer. Our free ebook *Interaction Design Best Practices: Mastering Time, Responsiveness and Behavior* goes into further detail about how each of these concepts works and provides usable examples of each, but for now we'll summarize the main points:

1. Squash and stretch

Give objects a feeling of physical mass and responsiveness by allowing them to contract or stretch when moved. Decide the level of realism you want, then apply the effect accordingly.



Photo credit: UXPin inspired by Pete McGrath

2. Anticipation

The appearance of the object suggests the action. In the below screenshot from [Jelly](#), you can see that the card is placed at an angle to hint that the content will drop once you swipe downwards.

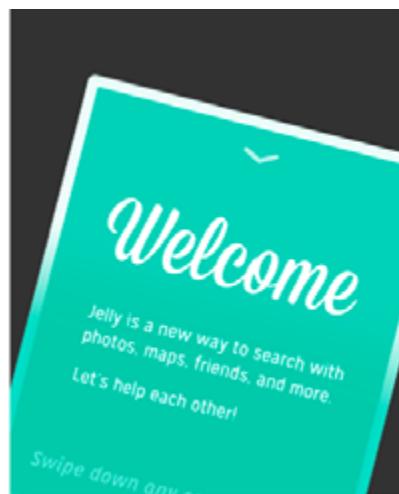


Photo credit: [jelly.co](#)

3. Staging

Present the action you wish to illustrate as clearly as possible. Apply colors, contrast, and composition to focus attention on the primary object. In the below example from Apple iOS, you can see how the background blurs to focus the user on the search bar.

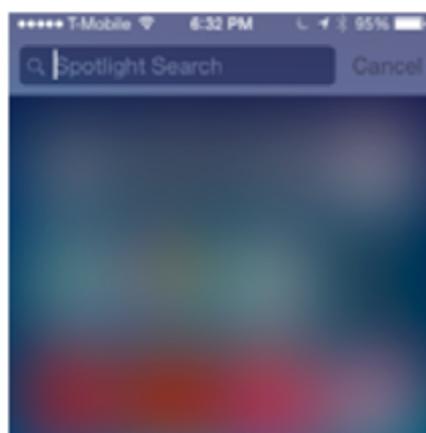


Photo credit: [Apple iOS](#)

4. Straight-Ahead Action and Pose-to-Pose

Straight-ahead animation conveys dynamic and complex movement, while pose-to-pose covers more predictable movement. As you can see in [this illustration](#), the first image shows straight-ahead, while the second shows pose-to-pose.

5. Follow-Through and Overlapping Action

Like squash and stretch, these two effects apply principles of physics to make your animation look more realistic. As you can see in [this illustration](#), the cape swings for a moment after landing as a result of momentum (follow-through). Upon landing, his legs and cape then move at different speeds (overlapping action).

6. Slow-In and Slow-Out

Objects should accelerate and decelerate just like they do in real life. For example, a side-swiping gallery on a mobile device should respond according to the speed of swiping.

7. Arc

Movement that follows an arc feels more natural, while movement along straight lines feel mechanical.

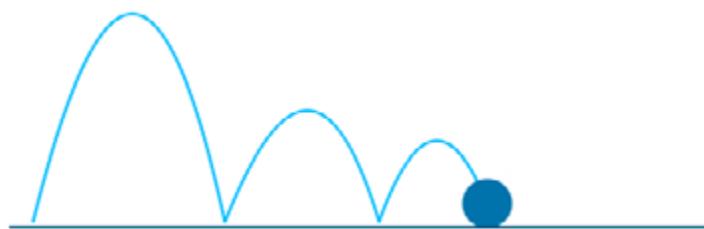


Photo credit: UXPin inspired by Tom Waterhouse

8. Secondary Action

Actions trigger multiple consequences. In the below example, you can see how the body and tail moves (primary action) which triggers a different movement of the tail (secondary action). Like Rachel Hinman suggests in her [excellent article on mobile animations](#), this means that your interface should reflect a similar reciprocity: when a submenu opens, animate the previous one closing.

9. Timing

Timing is tricky and highly subjective since different speeds convey different feels to the interaction. Lightning fast may work well for lighthearted and fun apps, while a steadier pace may work better for more complex apps. Regardless, you'll want to make sure the animation gets triggered [within 0.1 seconds](#) to make users feel in control.

10. Exaggeration

As the name suggests, pushing an object beyond the realms of reality can create a feeling of playfulness. But you should use it in moderation, otherwise your interface might just seem tacky. As you can see in [this animation](#), an exaggerated wobble and squash-and-stretch makes the ball bounce look more fun.

11. Solid Drawing

Objects should reflect weight and balance just like their real-life counterparts. In [this example](#), you can see that the person on the right better represents the mass and behavior of human limbs.

12. Appeal

Characters and objects in animation should appear lively and interesting. Follow the best practices of [emotional design](#).

In the modern examples below, you can see the influence of traditional animation. While the “cartoony” style still holds a magic that brings out a childlike wonder in us, and while it’s not appropriate for every site, the principles are certainly applicable to animation across the board.

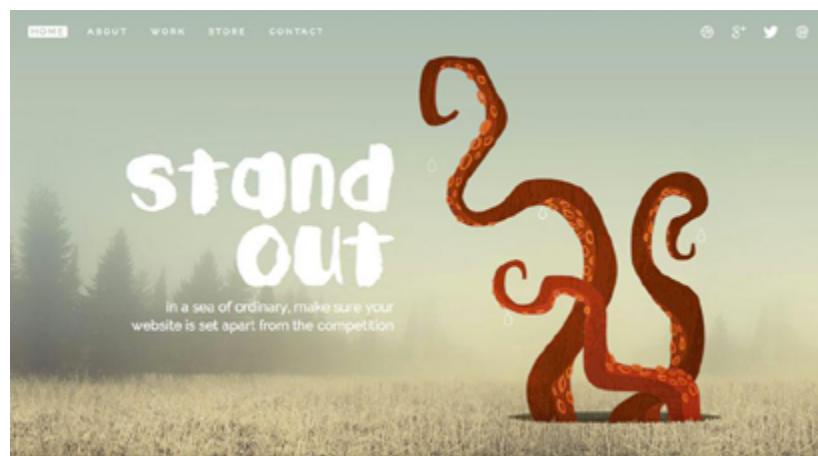


Photo credit: <http://www.denisechandler.com/>

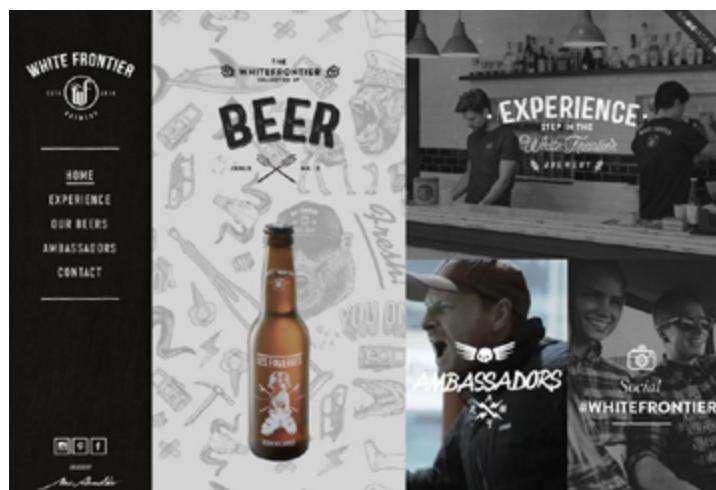


Photo credit: <http://www.whitefrontier.ch/>

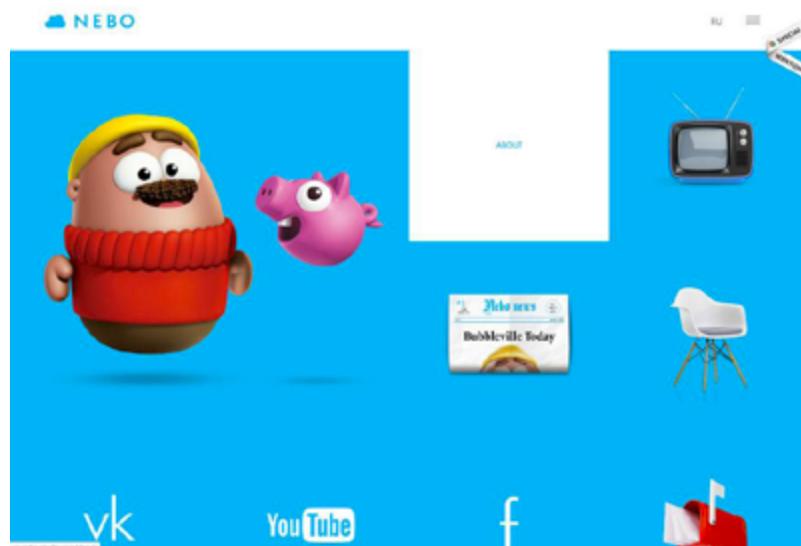


Photo credit: <http://en.nebo-studio.com/>

To learn more about the practical application of animation in web design, we highly recommend designer Val Head's [article on A List Apart](#) which examines animations from a UX perspective.

The Present: The Role of Animation in Web Design

As we mentioned earlier, the core functions of animation remain the same, but their application becomes more sophisticated as technology advances. Let's take a look at the traditional roles animation fills, and how that's accomplished today.

1. Communicating Function

When communicating function, an animation shows the user how something works. Regardless of [the controversy](#), hamburger menus are a popular use of an animated user interface tool that opens into a bigger element.

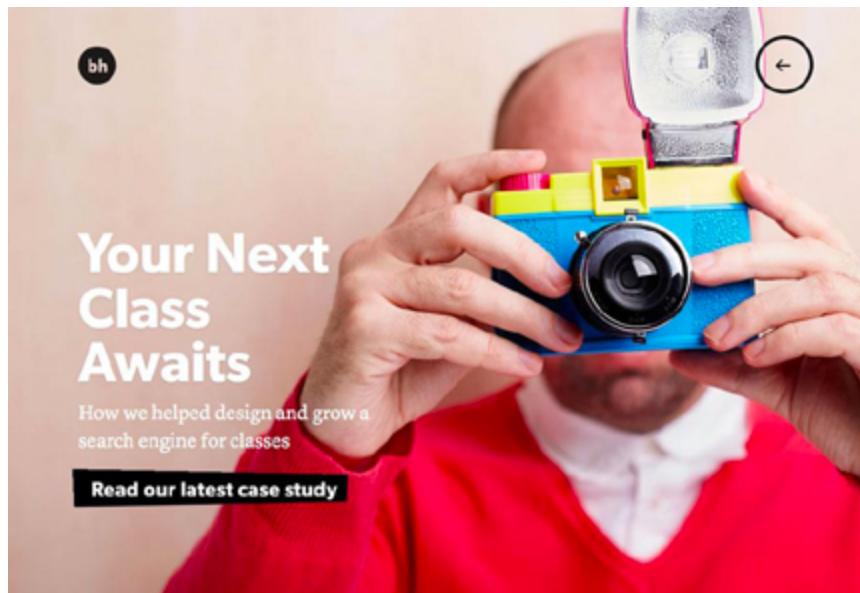


Photo credits: <http://www.brianhoffdesign.com/>

Brian Hoff Design uses a circular hamburger menu to pop out an oversized menu box from the right side of the web page. Hover over the icon itself and it animates to expand and changes shape to communicate how the hamburger menu will slide out additional options.

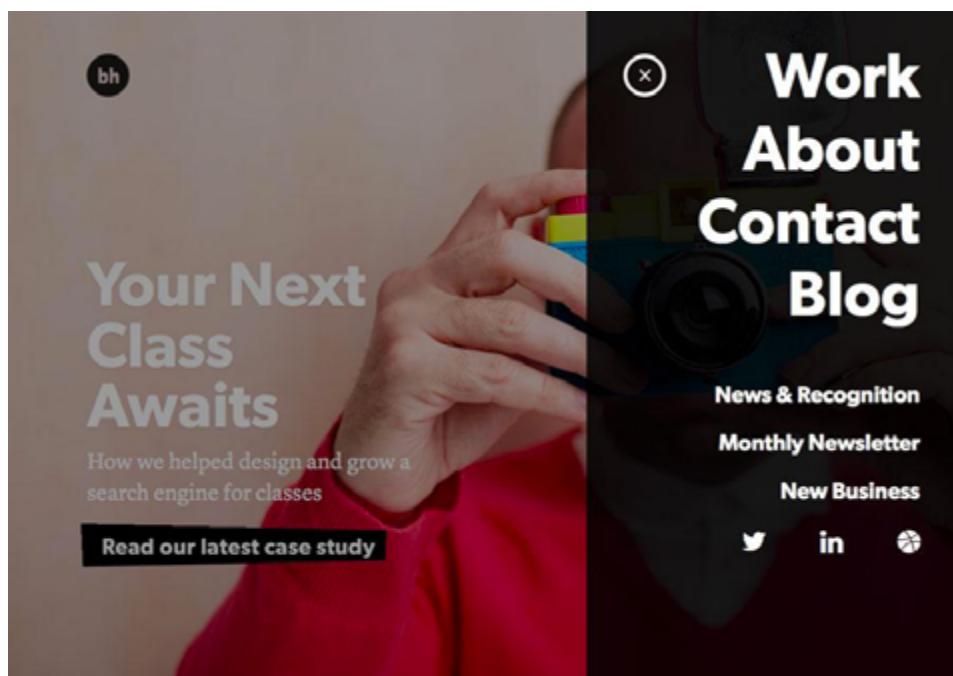
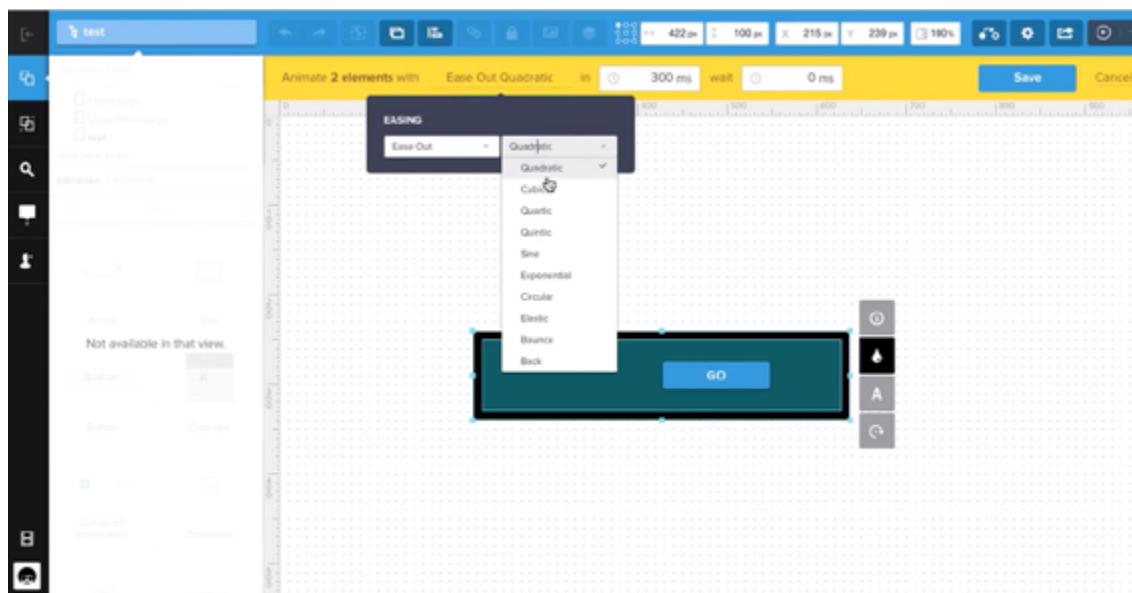


Photo credits: <http://www.brianhoffdesign.com/>

On a side note, [UXPin](#) actually allows you to [create animations](#) (like the sliding effect above) right in your own wireframes and prototypes.



Simply click on any element, then click the lightning bolt icon and select “Add Advanced Animation”. From there, you’ll enter an animations editor that lets you create any complex animation through a series of simple step-by-step menus.

2. Revealing Information

In addition to hinting at functions, animations are also an excellent tactic for revealing secondary information. Two common techniques are revealing upon hover and revealing upon clicking.

In the hover technique, a user mouses over content to uncover additional options. Due to the “hidden” default state of hover content, you only want to use this for secondary information (nothing

that's completely vital to navigating your site). Also, remember that hover won't work for mobile devices.

For example, on [Dribbble](#), hovering over each card reveals a supplementary short description.

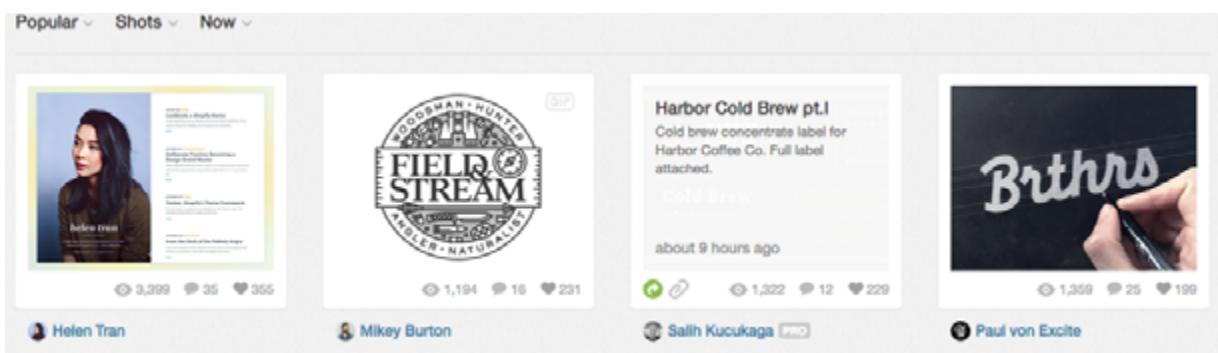


Photo credit: [Dribbble](#)

Alternatively, you can also use click-to-reveal if you're presenting a wealth of secondary information and don't want users to accidentally trigger it with a simple hover. For example, [AirBnB's map](#) presents tons of interface objects (per destination), so it makes sense to reveal the fun facts with a click rather than hover. Imagine how difficult the interface would become if mousing around destinations kept triggering little pop ups.

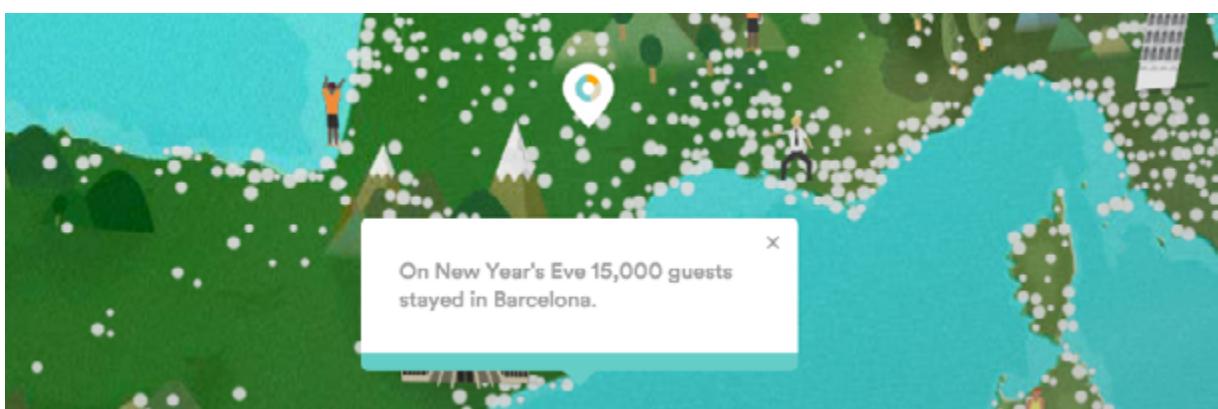


Photo credit: [AirBnB](#)

3. Distraction

Aside from interface functionality, animations serve as a great distraction as well. A neat loading “trick” keeps users from noticing that a site is not fully loaded.

Dunckelfeld uses a great bit of CSS in the orange polygon – which fills with color and contracts/expands – as the full-screen video background loads. Once the site loads, the orange bar relocates to the top-left as part of the company brand – a very nice subtle touch.

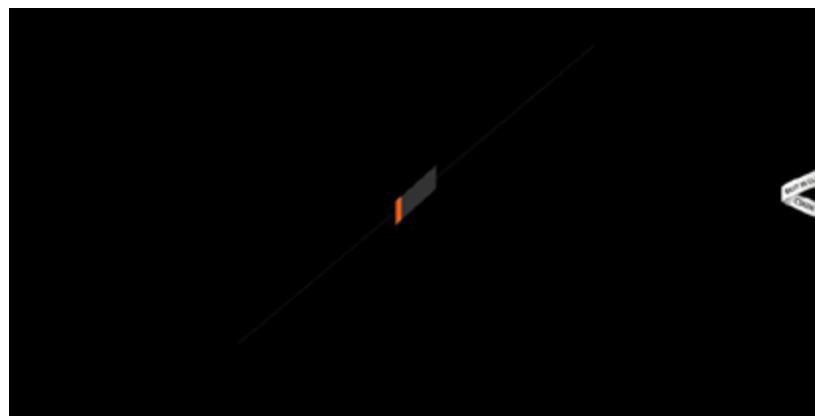


Photo credits: <http://www.dunckelfeld.de/en/>



Photo credits: <http://www.dunckelfeld.de/en/>

4. Storytelling

One of the most fun ways to use animation is in storytelling.

More websites are using animations that load automatically and loop through a simple story. The entertainment value keeps a user engaged with the site longer and provides a more lasting impression of the experience. For example, [Humaan](#) tells an interactive story with bits of movable and clickable copy, moving parts and tools that visually showcase their work.

The screenshot shows the Humaan website. At the top, there is a navigation bar with links: What We Do, Our Work, About (which is highlighted in red), Blog, Contact, and a button labeled START A PROJECT. Below the navigation, there is a large image of four people standing side-by-side. In the center, there is a profile for Lee Karolczak, Development Lead. The profile includes a smaller image of Lee, his name, his title, and a short bio: "Lee is passionate about web development, has an appetite for luncheon meats and makes smart investments in fine ice-cream. In his spare time Lee utilises his creative talents building web games, experimenting with digital art and playing ultimate frisbee." Below the bio are two small social media icons. At the bottom of the page, there are four smaller images of other team members.

Photo credit: <http://humaan.com/about/>

As you scroll down the [About page](#), fun facts about the agency are also revealed as part of a larger grid. Without the clever animations here, it might feel overwhelming to suddenly see a large block of text all at once.



Photo credit: <http://humaan.com/about/>

5. Pacing

All animation is a representation of change in time, as we outlined in [Interaction Design Best Practices](#).

Time is represented by pace, responsiveness and context. While you can play around with different durations for animations, you generally want to trigger the animation **within 0.1 seconds** from the moment of user action to make the interface feel responsive.

For example, in [this preview](#) of a project, click on the “Learn more” button.

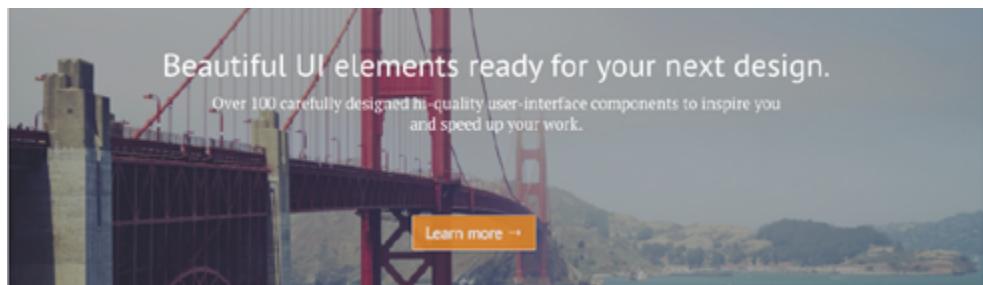


Photo credit: UXPin

Once you've scrolled to the bottom of the screen, the signup form transitions into view within 300 ms. In this case, we didn't set a delay on the scroll itself since that's directly triggered by the user action, but we added additional time to the secondary transition animation. This subtle touch prevents a jarring effect.

As a means to control time, animation in moderation sets are more comfortable pace for the website experience.

The Future: Up-and-Coming Web Animation Trends

The types of animation we are seeing on websites today are just the beginning. Animated techniques will continue to evolve as designers break out of using animation for only text, shapes and drawn elements by incorporating it into design projects that use more still photos as well.

1. Animation for “traditional” business:

You'll likely start seeing companies such as financial institutions, colleges and other visually conservative businesses feature more

animation on their websites. It's not surprising considering how far animation has progressed in the past few years in shedding its cartoonish qualities (except when intentional).

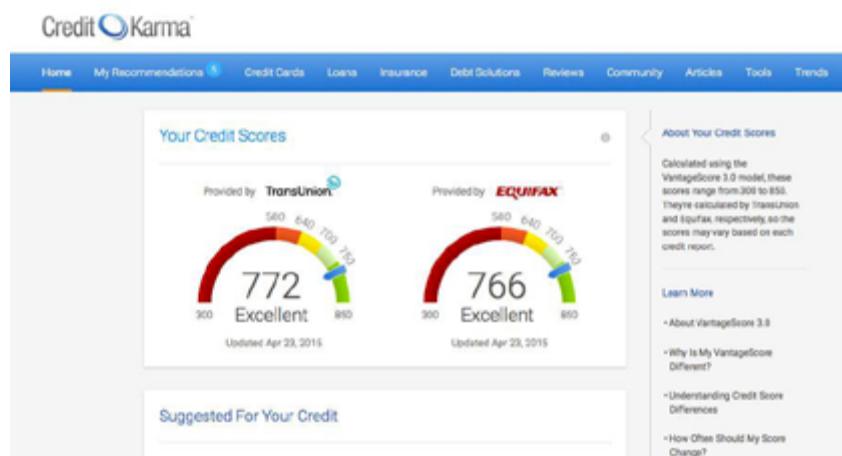


Photo credit: <https://www.creditkarma.com/>

Credit Karma, which provides individual credit reports and suggestions, uses simple animations for each report in the user dashboard. Animated loading effects entertain the user as information is populated, hover animations tell users what specific blocks of information mean and a scroll animation shows user progression on the site.

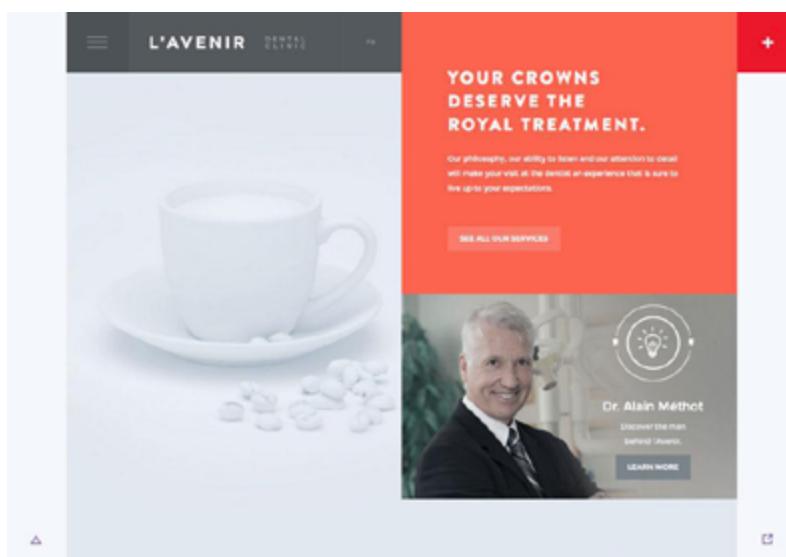


Photo credit: <http://avenirclinic.com/>

[L'Avenir Dental Clinic](#) uses animated effects for a website in a field where they are seldom seen – medicine – with the neat light bulb over the image in the bottom corner and an impressive navigation. The animations and generous use of white space create a sophisticated and luxurious ambiance, which makes a lot of sense considering that the clinic highlights its specialty in cosmetic dentistry.

2. Animation as a sales tool

Animation can showcase products and provide neat details in the user experience. Think of those 360-degree angles available from some retailers.

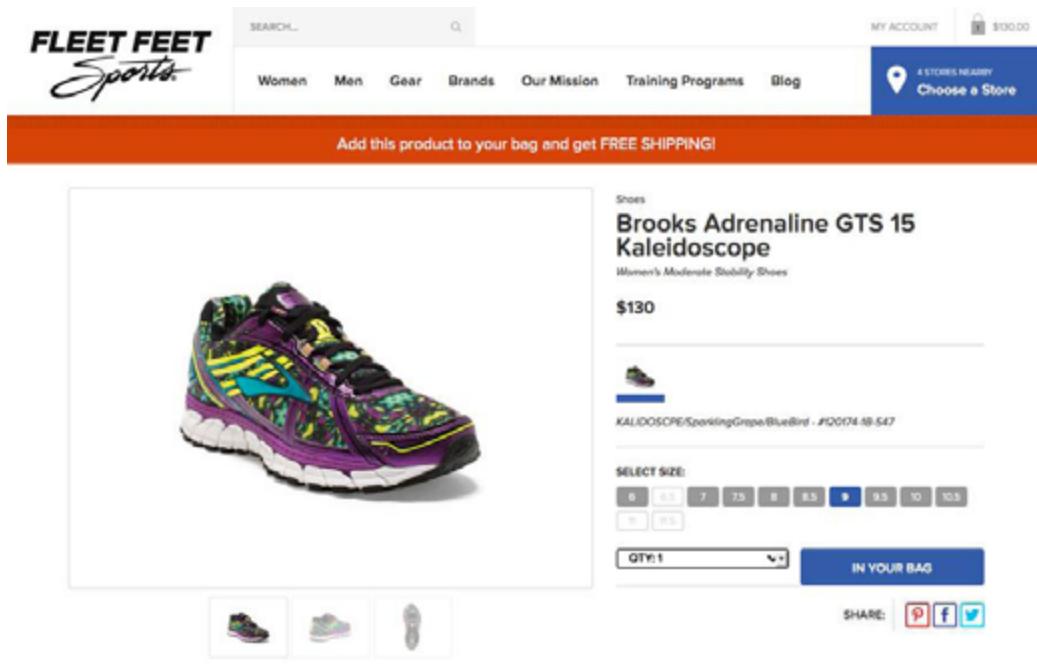


Photo credit: <https://www.fleetfeetsports.com/>

[Fleet Feet Sports](#) zooms an item from the screen to the cart in the top right with a single click. The animation is fun and provides an instant gratification experience for the shopper because the speed of the animation makes the purchase feel immediate.

3. Flat Design 2.0

Flat design 2.0, [first coined](#) by designer Ryan Allen, is the next iteration of the vibrantly colored and grid-friendly design philosophy. As we described in [Flat Design Trends Present & Future](#), flat design 2.0 actually embraces design elements traditionally associated with skeuomorphism (like gradients and textures).

The tradeoff for flat design's visual maturity, however, is familiarity. As the name suggests, flat design strips away any flourishes so that the interface prioritizes the content. Despite the generous color on most flat-inspired sites, the experience can feel a bit mechanical and stiff. Luckily, animations complement the experience by adding fluid feedback.

In fact, [Google's Material Design](#) (a philosophy related to flat design) specifications include a section devoted to animation. As more designers embrace this design philosophy, animation will be essential to injecting liveliness into an otherwise industrial layout.

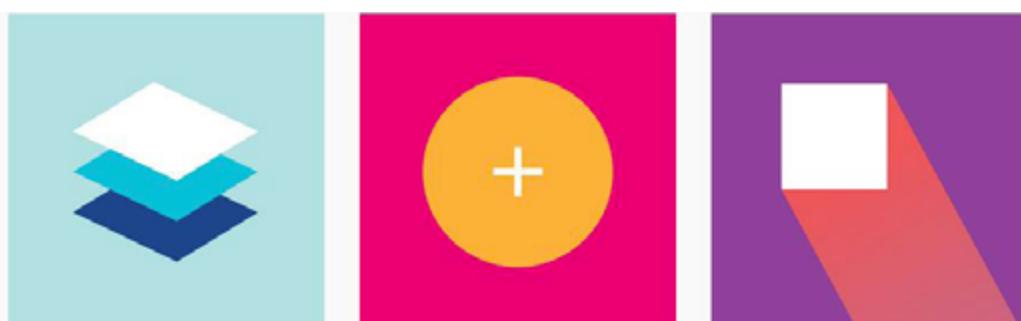


Photo credit: <http://www.google.com/design/spec/material-design/introduction.html#>

Material Design describes animation as an “authentic motion” in this way: “Just as the shape of an object indicates how it might

behave, watching an object move demonstrates whether it's light or heavy, flexible or rigid, small or large. In the world of material design, motion describes spatial relationships, functionality, and intention with beauty and fluidity."

Animation is a design technique that is not going anywhere any time soon. Animations add life to any design, engage users in even the most mundane tasks, and of course make you stand out from above the crowd. When we consider web design based upon the [hierarchy of UX needs](#), animations are a core component to helping your site make the emotional leap from usable to desirable.

10 Additional Free Resources and Tools

1. **12 Principles of Animation Video**: Animator Ceno Lodigiani illustrates the principles with a GIF representing each concept.
2. **CSS3 Animation Cheat Sheet**: This set of preset, plug-and-play animations is ready-made with a set of style sheets you can add to your website and apply the premade CSS classes to the elements you want animated.
3. **Web Animation API**: This document provides a unified language for animation and how to develop it. It outlines everything from the basics of animation to providing an API.
4. **“Mythbusting: CSS Animations vs. JavaScript” by CSS-Tricks**: What’s the best method for creating a website animation? This article weighs the options.
5. **“Web Animation at Work” by A List Apart**: This article looks at how animation can be used (and overused) in a variety of projects and that animation is just a further expansion of other design techniques.
6. **“15 Animation Tutorials” by UltraLinx**: What’s nice about today’s web animation is that almost anyone can do it. This guide teaches you tricks of the trade.
7. **Elastic SVG Elements**: Learn to create SVG shape animations for user interfaces.

8. **Top Tools to Create Animations With:** This list of 15 resources can help you find all the tools you need to create beautiful animations.
9. **Transit:** Create smooth CSS transitions and transformations.
10. **Material Design Animation Examples Gallery:** Take a look at what designers are envisioning for material design and glean a little inspiration from it.

9 Modern Uses for Animation in Web UI Design

The uses and capabilities of animation in web design are changing every day. With the quickening development of technology, animation is less of a visual luxury and more of a functional requirement that users expect.

Before we delve into the specifics, let's talk about the two main ways to think about animation:

- In a [tiny format](#) where almost invisible interactions requires little input or help from the user. These minor interactions and formats include design elements such as spinners, loading bars, counters or hover tools.



Photo credit: Dunckelfeld

- As a primary interaction tool essential to the function of the website. Primary functions include interacting with a call to action or watching a video on the screen, while primary interactions refer to scroll-activated animations (like [parallax scroll](#)), notifications or bringing attention to content, providing user information or direction for how to use a site.



Photo credit: Costa Coffee

With that distinction in mind, let's examine the 9 modern uses for animation in web design, the best way to approach each, and some current examples.

1. Galleries and slideshows

One of the most common uses for animation is commonly done incorrectly.

The trick is in how fast (or slow) images load and how they move on the screen. Motion within galleries and slideshows should feel

realistic and function in a way that mimics flipping through a photo album. This link between reality and digital “reality” establishes a logical connection for users.

It is important to note, however, that you don’t need to represent the gallery in a photorealistic fashion ([skeuomorphism](#)) – it just needs to function realistically.

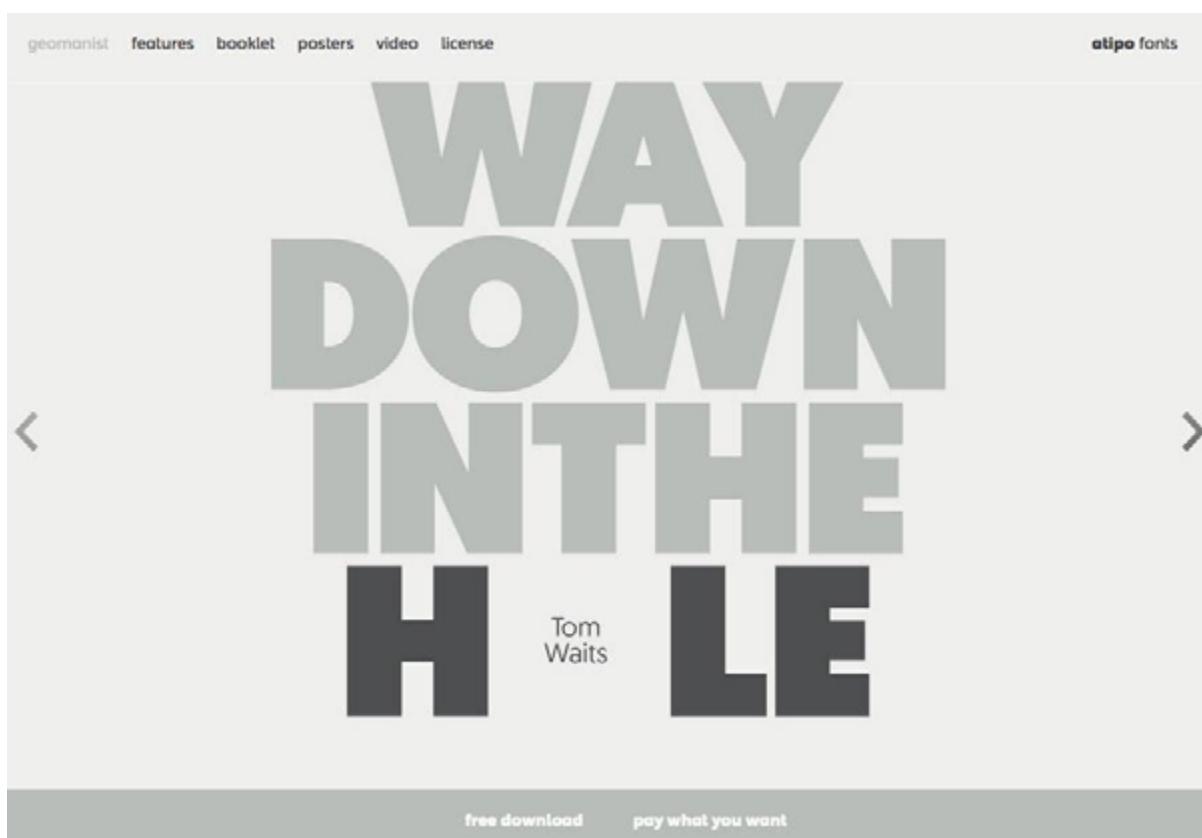


Photo credit: <http://geomaniac.com/>

2. Form fields or calls to action

Animation can make [forms](#) easier to fill out and show users how to properly complete the desired action, whether highlighting field-by-field or marking fields as complete. Since forms are specifically designed for user interaction, animation fits in perfectly.

Nerisson uses a simple color animation on the “Works” button to entice users to click. The design combines the [ghost button](#) trend and animation (also note the animated background) for a layered interactive effect in a simple package.

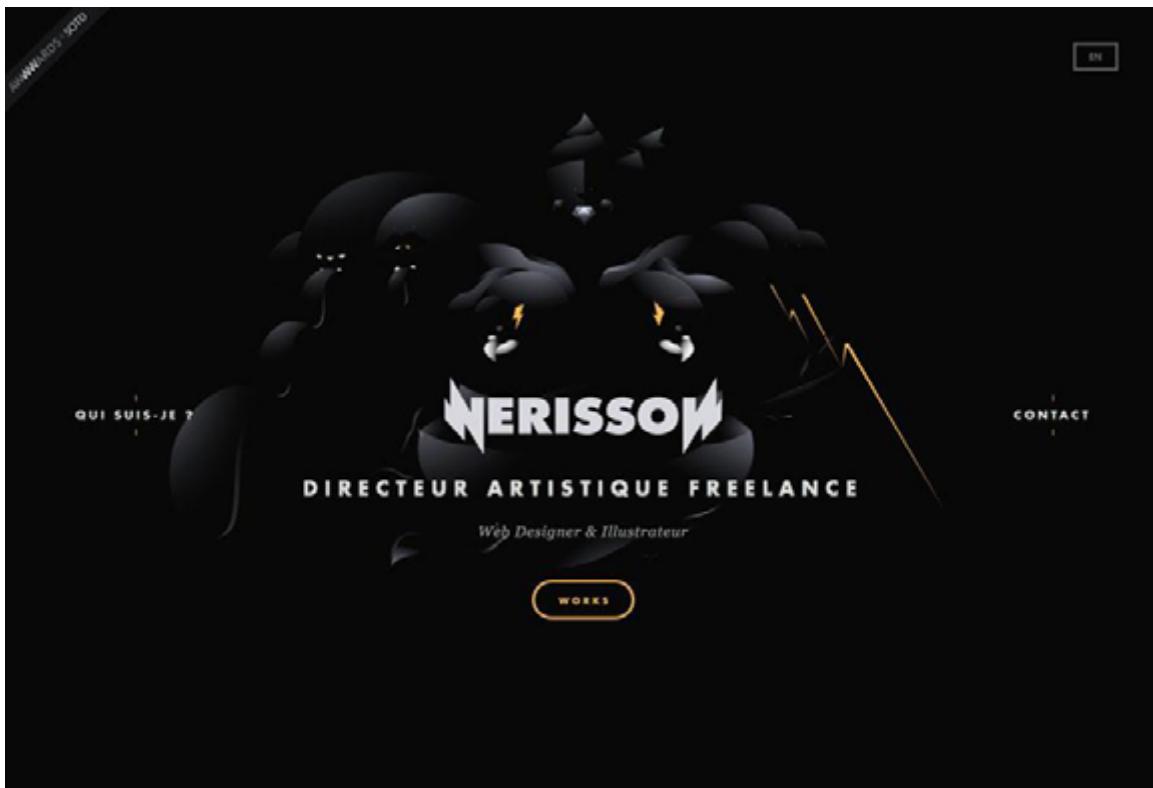


Photo credit: <http://www.nerisson.fr/>

3. Navigation and menus

While [hamburger animation](#) might be the trendy option here, there are plenty of other ways that animation complements navigation. From sliding options to sticky nav bars, animated effects serve as a valuable user map on a website.

Purple Rock Scissors uses simple animations throughout the site, beginning with a nice loading effect, but the navigation might be their best example. The “bouncy” hamburger icon expands to

a full-page navigation menu with links featuring colored hover states. Every element is designed to engage the user and capture his or her attention; animation further explains how to use the site and access content.

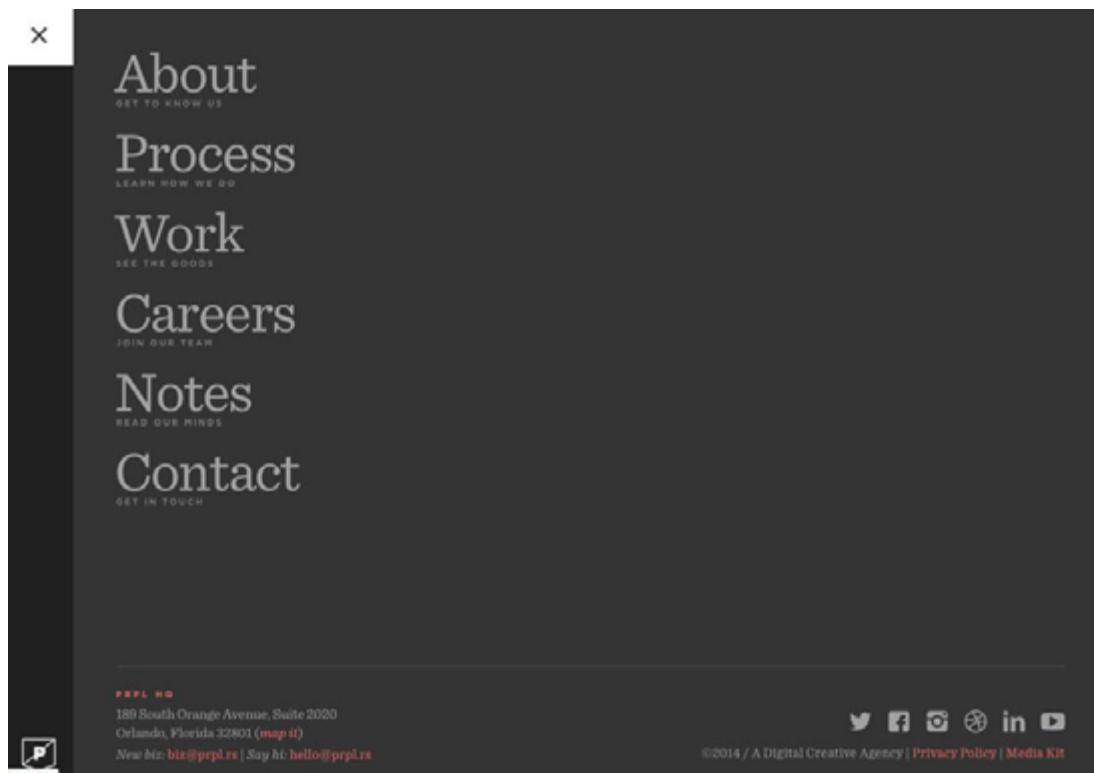


Photo credit: <http://purplerockscissors.com/>

4. Page motion

While this might be one of the trickiest types of animation to work with, simple page motions are an effective way to make content more stimulating

From [AJAX loading](#) options to simple shakes or cartoons, full-page motion is certainly a captivating effect. Be warned: too many loading items can bog down a site and cause it to render slowly, so test and plan accordingly.

Every movement of the mouse makes the image for [Hunger Crunch](#) shift on the screen. The movements mirror user actions and while they can be somewhat jarring, the animation creates distinct interest. This effect can be very difficult to replicate, but works well for a lighthearted site like this one.



Photo credit: <http://www.hungercrunch.com/>

5. Backgrounds

Typically restricted to aesthetics, an animated background can bring attention and focus to a site, creating a strong first impression to help attract new users.

The background for the [Terna site](#) is in constant motion. Users can watch the on-screen urban bustle for an extended period of time, which is what makes the animated background special – it demands to be looked at.

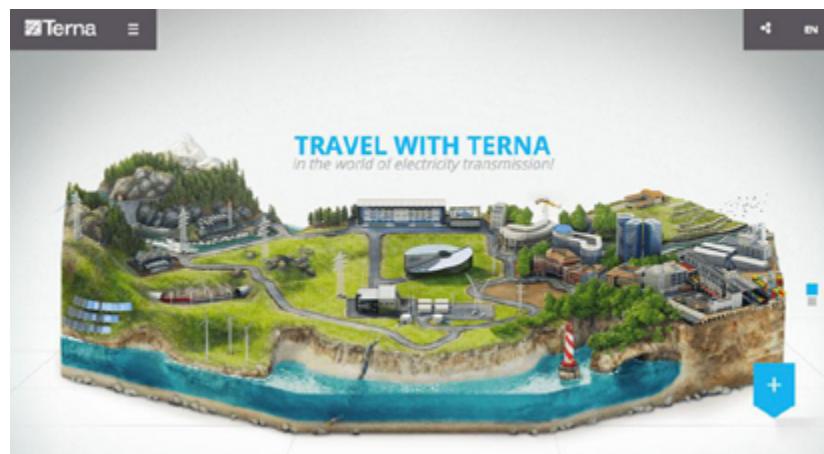


Photo credit: <http://trasmissione-energia.terna.it/>

The trick to all animated effects is simplicity. Too many animated effects feel jarring and distracting for users. The best animated design techniques provide simple direction (or entertainment) without requiring the user to think about the animation itself.

6. Loading

As we described in the free ebook *Interaction Design Best Practices: Mastering the Intangibles*, loading animations are some of the most popular “unseen” elements on the web. We call these unseen elements because no user actions are required to trigger the animation.

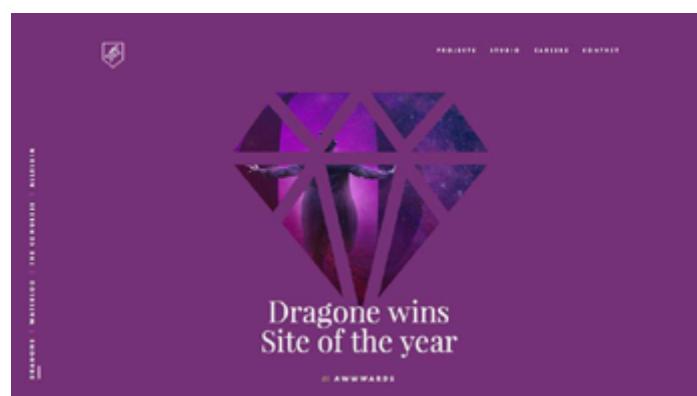


Photo credit: <http://www.dogstudio.be/>

Loading animations are entertaining and provide a sophisticated feel for an otherwise simple website, making them a popular option for designers using **flat design** or **minimalist styles** or for sites that offer relatively simple content, such portfolios and **one-page sites**.

To make the best of a loading animation, keep it simple. Don't overwhelm the effect with other elements such as sound or "flashy" techniques. The animation should match the design outline of the site – if the site is minimal, the animation should be as well.

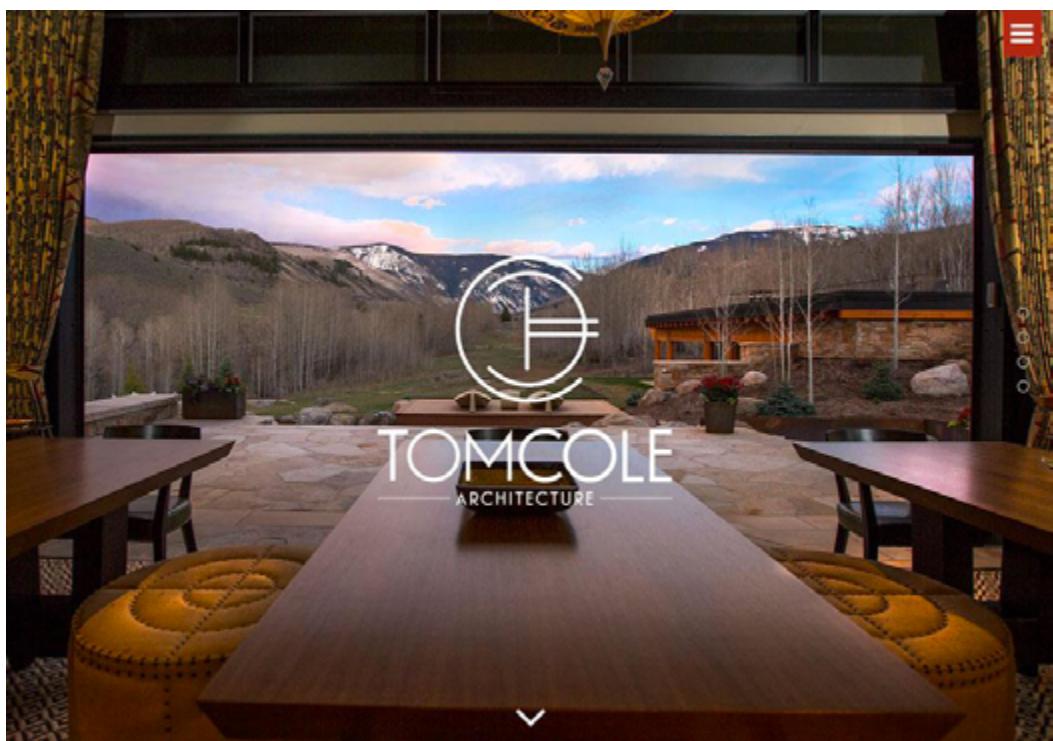


Photo credit: <http://tomcolearchitect.com/>

Tom Cole Architecture has a classic and beautiful feel to the site. The logo text loads as a smooth and beautiful animation – just once, not on a loop – that embodies the trend and mirrors the feel of the brand. The site also includes a hamburger menu with a smooth, animated navigation bar. The effects are simple and elegant.

7. Scroll Animation

When it comes to designing [one-page websites](#), scrolling animation is one of the most effective design tools. The effect allows a website to go on for an unlimited number of “pages” (or scrolls) in a single-page format. What’s especially nice about this style of animation is that it works with and at the pace of the user.

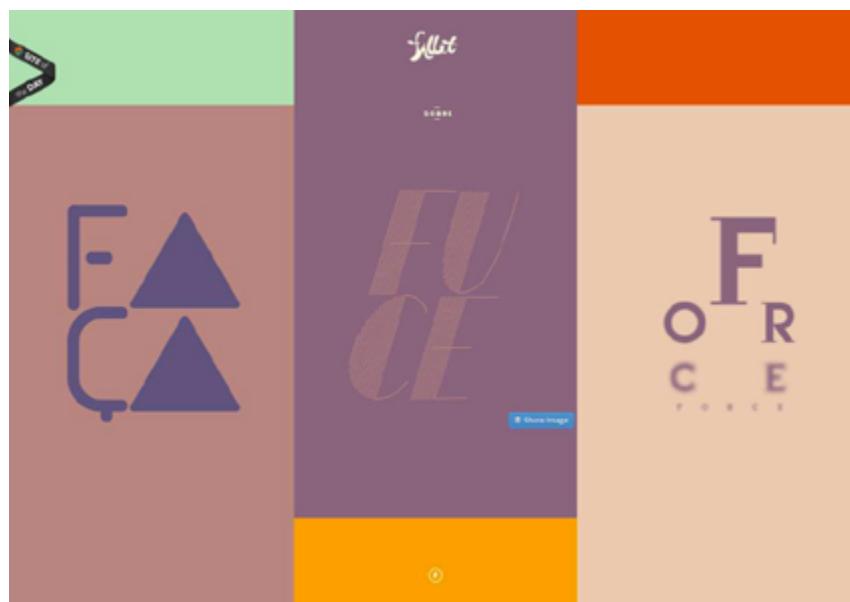


Photo credit: <http://fillet.com.br/>



Photo credit: <http://www.kaipoche.co/>

The animated scrolling method mimics the browsing aspect of traditional print mediums, and accomplishes three main functions, according to *Interaction Design Best Practices*:

- Orients the user with how much content is on the site and where they are in relation to the rest of it.
- Opens up opportunities to browse and discover new content that page-to-page layouts sometimes lack.
- Smooths jarring transitions from page-to-page.

Scrolling is also a tool in activating on-screen elements. While this can refer to the addition of content in a one-page environment, it also applies to how other objects on the screen behave. For example, scrolling can activate elements within an infographic, tell a story or [play a game](#).



Photo credit: <http://www.bizbrain.org/coffee/>

Where Does Coffee Come From? is a scroll-activated infographic filled with other touches of animation.

Moreover, the clouds move across the screen in an auto-loading animation while scrolling helps the hand on the left side of the screen drop and plant the coffee bean. Subsequent pages are equally entertaining with the mix of loading and scroll-based animations. What makes them work together is subtlety and purposefulness. Users barely notice the background animations on their own, while scrolling engages the user by controlling the pace of the story.

8. Hover

Animations can indicate change as well. As described in the free e-book [Web UI Patterns](#), the hover state is actually one of the most popular subtle animation patterns to show change in an interface object. A button or image may appear one way when the website loads, but will look another way when the user interacts with it, such as sliding the mouse over the element. This subtle change helps users better understand how to use a website by revealing related actions without needing to occupy additional space.

As you can see below, Alectia uses very simple animations as the user hovers over any block, with a simple visual that encourages a click on that content section. In this case, the animation only improves the interaction design since no additional content is revealed.

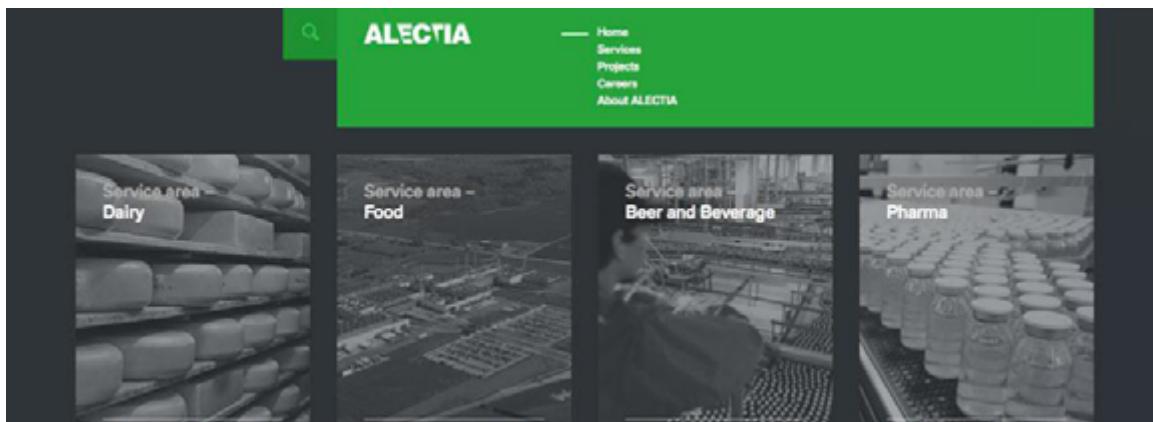
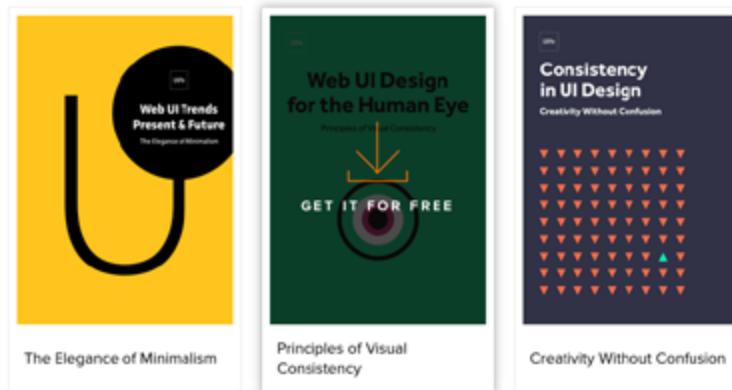


Photo credit: <http://www.alectia.com/en/>

On our own website, the [Design Library](#) uses hover animations as calls to action to download our free ebooks. The treatment provides a nice aesthetic effect while saving space to preserve the clean cards layout.



Source: [UXPin Design Library](#)

9. Animated photography

This last use is a glimpse into the future – the use of animated photography is still young, but is growing in popularity.

Designers can animate still images and combinations of images, shapes and text to create a more immersive experience. As the flat

design trend **continues to morph** with more touches of realism, photo animation will increase in popularity.



Photo credit: <http://lookbook.bolia.com/chilling/>

Bolia uses simple still photographs with parallax scrolling animation to create an experience that introduces users to their furniture. The mix of full-screen images, scroll effects and product placement combine for a user experience that does not push a the product on a user but makes him or her want the items in the images.

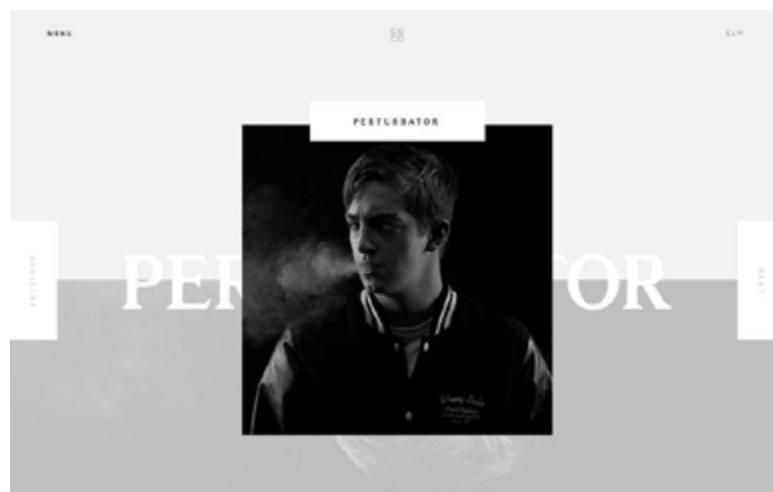


Photo credit: <http://www.sa-studio.fr/>

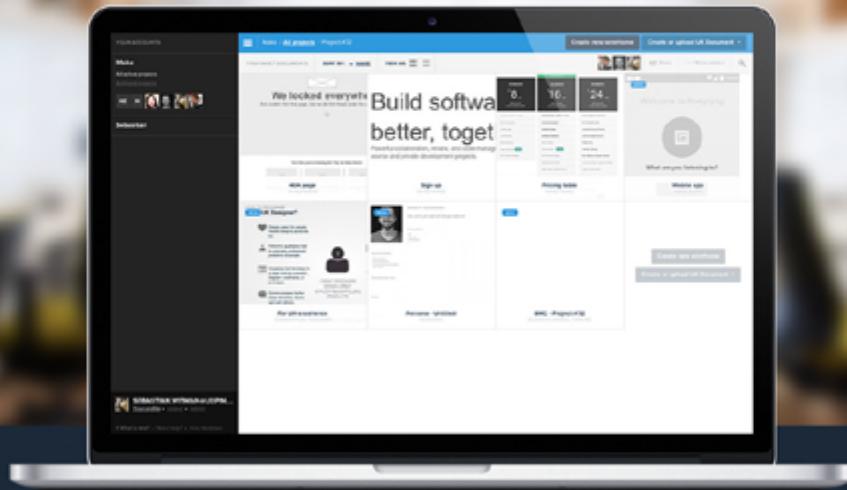
The site for [Suspended Animations](#) mixes multiple animated effects, photography and scrolling in a refreshingly modern yet classic manner. As the company name suggests, each image is suspended on the screen as animated effects are added; the user is introduced to the staff and learns more about the company as a whole.

Conclusion

Animation is not just fun and games.

Despite its inherent connection to childish cartoon, in UX design it's an effective tool that serves several important roles. A good designer recognizes that animation can be a powerful problem solver... but that doesn't mean it can't still be fun at the same time.

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